U.S. Army Corps of Engineers
Kansas City District

Demolition Design Report
Operable Unit 2 - Building Demolition

Cornell-Dubilier Electronics Superfund Site
South Plainfield, NJ

USACE Contract No. W912DQ-06-D-0006
Task Order No. 0001

October 2006

Prepared by:
Malcolm Pirnie, Inc.
104 Corporate Park Drive
White Plains, New York 10602

Malcolm Pirnie, Inc.
40 Centre Drive
Orchard Park, NY 14127

INDEPENDENT ENVIRONMENTAL ENGINEERS, SCIENTISTS AND CONSULTANTS

MALCOLM PIRNIE

MALCOLM PIRNIE

Table of Contents

CORNELL-DUBILIER ELECTRONICS SUPERFUND SITE
DEMOLITION DESIGN REPORT
FOR OPERABLE UNIT 2 (OU-2)

Page

Table of Contents

MALCOLM PIRNIE

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

MALCOLM PIRNIE

Introduction

SECTION 1

1.1 Project Background

The Cornell-Dubilier Electronics Superfund Site (the Site) is located at 333 Hamilton Boulevard in South Plainfield, Middlesex County, New Jersey (Figure 1).

The Site consists of approximately 26 acres including the Hamilton Industrial Park, contaminated portions of the Bound Brook adjacent to and downstream of the industrial park, and contaminated residential, municipal, and commercial properties in the vicinity of the former Cornell-Dubilier Electronics Corporation, Inc. (Cornell-Dubilier Electronics) facility. The Site contains 18 subdivided buildings, numbered 1 through 18, some of which are currently used by several commercial and light industrial operations. Plan and elevation views of the Site buildings and storage tanks are shown on the Contract Drawings.

The developed portion of the facility (the northwestern portion) comprises approximately 45 percent of the total land area and contains buildings, a system of catch basins to channel stormwater flow, and paved roadways. Several of the catch basins drain into a stormwater collection system whose outfalls discharge at various locations along Bound Brook. The other 55 percent of the property is undeveloped and is predominantly vegetated. The central part of the undeveloped portion is primarily an open field, with some wooded areas to the northeast and south, and a deteriorated, partially paved area in the middle. The northeast and southeast boundaries consist primarily of wetland areas (Foster Wheeler, 2002).

The Site remediation was separated into multiple Operable Units. Operable Unit-1 (OU-1) consists of the residential, commercial, and municipal properties in the vicinity

SOURCE: U.S.G.S. TOPOGRAPHIC MAP,
7.5 MINUTE SERIES, PLAINFIELD, NEW JERSEY
QUADRANGLE, 1955, PHOTOREVISED 1981

MALCOLM PIRNIE	U.S. ARMY CORPS OF ENGINEERS CORNELL-DUBILIER SUPERFUND SITE OU-2 BUILDING DEMOLITION SOUTH PLAINFIELD, NEW JERSEY CONTRACT NO. W912DQ-06-D-0006	SITE LOCATION MAP SCALE AS NOTED	MALCOLM PIRNIE, INC. OCTOBER 2006 FIGURE 1

of the former Cornell-Dubilier Electronics facility and is being addressed by others. OU-2 consists of contaminated facility site soils and buildings which are being addressed by Malcolm Pirnie, Inc. This design addresses demolition of the existing site buildings; site soil contamination will be addressed through separate design documents. The groundwater and sediments in the adjacent Bound Brook will be addressed by the USEPA as part of future Operable Units. The response action selected in the Record of Decision (ROD) dated September 2004 for OU-2 buildings includes:

1. The demolition of the 18 on-site buildings; and two storage tanks.
2. Transportation of the building debris off-site for disposal, with treatment as necessary; and
3. Relocation of eligible tenants at the former Cornell-Dubilier facility buildings pursuant to the Uniform Relocation Act, as necessary. The Government will be responsible for relocation of eligible site tenants.

1.2 Purpose and Scope

This Demolition Design Report (DDR) provides an overall description of the design for the demolition and removal of the on-site buildings and structures, including removal of slabs and below grade foundations. Site-specific details, such as building demolition sequencing and site-specific operations, are also addressed.

1.3 Description and Background

From the turn of the century until approximately 1929, the Spicer Manufacturing Co. operated at the project site manufacturing universal joints. Cornell-Dubilier Electronics operated at what is now the Hamilton Industrial Park from 1936 to 1962, manufacturing electronic components including capacitors. Polychlorinated biphenyls (PCBs) and chlorinated organic degreasing solvents were used in the manufacturing process, and it has been alleged that during Cornell-Dubilier Electronics' period of operation the company disposed of PCB-contaminated materials and other hazardous substances at the facility. A former employee has claimed that the rear of the property was saturated with transformer oils and that capacitors were also buried behind the facility during the same

time period (Foster Wheeler, 2002). Based on historic site practices, portions of the Site have the potential to be contaminated with asbestos, lead, mercury, PCBs, TCE and dechlorination products, and other constituents of potential concern (COPCs).

1.4 Pre-Design Investigation – Buildings Data Summary Report

1.4.1 Sampling and Data Collection

Appendix A to the contract specifications contains a Data Summary Report (DSR) which summarizes all data collection activities performed in 2006 by Malcolm Pirnie. Data collected previously by others is also presented and referenced.

1.4.2 Analytical Results and Reporting

The locations and quantities of asbestos-containing materials, lighting ballasts, mercury switches and bulbs to be removed as a result of the field identification program are shown on the Contract Drawings. Areas of PCBs and metals contamination of buildings are also shown on the contract drawings.

Potential PCB-containing materials observed during the field survey were limited primarily to light fixtures, with the exception of the three transformers mounted at grade at the northeast corner of Building 15. These transformers were not sampled, but were assumed to contain PCBs.

PCBs were also detected in wall and floor cores obtained from several buildings and within paint collected from wall surfaces.

Other potential hazardous materials identified during the field sampling program were generally limited to household hazardous wastes, such as small quantities of gasoline, lubricants, paint, weed killer, pool chemicals, and small propane tanks. An allowance for removal and off-site disposal of these items is included under the Supplementary Bid Schedule (Item S-001).

MALCOLM PIRNIE

Building Cluster Design

SECTION 2

2.1 General

As mentioned in the previous section, a total of 18 buildings and two storage tanks exist within the site boundaries. Many of the buildings were constructed at or prior to the turn of the century and have potential historical significance due to the operations of the Spicer Manufacturing Co. Part of the demolition design scope was to perform architectural research to determine the historical significance of the site buildings. A number of the buildings on-site are also currently occupied by business tenants. The USACE is currently in the process of evaluating relocation of the business tenants to allow demolition to proceed. The relocation of site tenants is therefore not the responsibility of the Contractor and is not a requirement of the contract documents.

Based on current tenant information and the location and interconnection of structures and supporting infrastructure, buildings/structures were combined into discrete groups or "clustered" into 12 clusters (see Contract Drawing G-03). Each cluster contains one or more buildings/structures. The cluster formatting of the contract and bidding documents prepared for use by the demolition Contractor allows the USACE to obtain bids for each cluster, group(s) of clusters, or the entire project site. This flexibility will allow the USACE and the USEPA to choose the timing and allocate funds for the most advantageous staging of the demolition of buildings, allowing for consideration of tenant relocation, the results of the archaeological surveys/documentation, and funding considerations.

2.2 Cluster and Building Description

As previously noted, there are 18 buildings and two storage tanks included in the 12 building clusters. Plan and elevation views as well as color photographs of the buildings and structures are included on contract drawings G-04 through G-52. The building dimensions were measured during the pre-design field investigation to prepare the elevation views shown on the drawings.

Most of the site buildings are open-bay, single-story masonry structures with steel roof framing and wood roofing decks. Interior masonry partition walls divide the larger buildings in Clusters 1, 2, and 3 into three or more separate tenant spaces. The attached Table 2-1, Structures to Be Demolished, includes a summary of building and structure features by cluster and identifies key elements of each building.

Since there are no existing as-built engineering drawings of the existing structures, it has been assumed that the buildings are constructed on 12-inch thick spread footings which extend to four feet below grade. All buildings on the site have complete or partial floor slabs. All of the buildings have interior columns except buildings 7, 8, 11, and 12. Building height varies from approximately 10 feet to approximately 48 feet, with an average height of approximately 20 feet. Dimensions were recorded during field reconnaissance by Malcolm Pirnie in 2006.

The only building with a basement is Building 15. The basement underlies the entire length and width of the former engine room and extends to approximately six feet below grade. The basement contains six individual piers consisting of three-foot thick concrete walls formed into squares and rectangles as supports for the suspended first floor slab above. Access to the basement is through Building 18.

Building 16, the former boiler house, contains a concrete coal bunker suspended from the ceiling which is approximately 20 feet wide, 20 feet tall, and extends the length of the building from north to south.

TABLE 2-1
Cornell-Dubilier Electronics Superfund Site OU-2 Structures To Be Demolished

Cluster Number	Building Number	Type of Construction	Roof Framing	Dimensions (ft) and Total Area of Building (SF)	Approx. Max Height (ft)	Former Building Designation / Year Constructed[1]	Current Use/Tenant (as of October 2006)
1	1	Single Story Masonry Structure with a Wood Roof	Steel SawtoothTruss	270 ft x 184 ft 49,700 SF	25	Storeroom / Etching / 1913	Spring Coil Bedding, Inc.
	1A	Two Story Masonry Structure with a Wood Roof	Steel SawtoothTruss		25 (Second Floor)	Testing / 1914	Vacant
	1B	Single Story Masonry Structure with a Wood Roof	Steel SawtoothTruss		17	Forming Tanks / 1914	Vacant
	1C	Single Story Masonry Structure with a Wood Roof	Steel SawtoothTruss		17	Forming Tanks/ Reactors / 1914	Vacant
	1D	Single Story Masonry Structure with a Wood Roof	Steel SawtoothTruss		25	Office / 1914	Spring Coil Bedding, Inc.
	6	Single Story Masonry Structure with a Concrete Roof	18' deep Concrete Beams	79 ft x 51 ft 4,015 SF	20	Wax Room / 1913	Vacant
2	2	Single Story Masonry Structure with a Wood Roof	Steel Girders / Timber Purlins	275 ft x 89 ft 24,500 SF	20	Aging Racks / 1916	A&C Catalysys, Inc.
	2A	Single Story Masonry Structure with a Wood Roof	Steel Girders / Timber Purlins		20	Aging Racks / 1916	BP Nanick
	3/4	Single Story Masonry Structure with a Wood Roof	Steel Framing / Trusses	121 ft x 142 ft 17,200 SF	48	Plating / Photo Etching / 1917-1926	Complete Liquidation Company
	4A	Single Story Masonry Structure with a Wood Roof	Steel Girders / Timber Purlins	121 ft x 142 ft 17,200 ft	12	Lab / 1917-1926	Complete Liquidation Company
3	5	Single Story Masonry Structure with a Wood Roof	Steel Girders / Timber Purlins	274 ft x 155 ft 42,600 SF	15	Winding Room / 1917-1926	Fayette Trading
	5A	Single Story Masonry Structure with a Wood Roof	Steel Girders / Timber Purlins		15	Paint Spray / Washing / Drying Room / 1917-1926	Complete Liquidation Company
4	8	Single Story Masonry Structure with a Concrete Roof	Steel Girders	257 ft x 44 ft 11,300 SF	15	Electric Generator Area / post-1930	Keystone Plastics
5	9	Single Story Masonry Structure with a Wood Roof	Steel SawtoothTruss	217 ft x 185 ft 40,100 SF	24	Etching Room / 1918	R&M Manufacturing, Inc.
	9A	Single Story Masonry Structure with a Wood Roof	Steel Girders / Timber Purlins		24	Forming Tanks / 1916	Vacant
	9B	Single Story Masonry Structure with a Wood Roof	Steel Girders / Timber Purlins		15	Forming Tanks / 1916	R&M Manufacturing, Inc.
	9C	Single Story Masonry Structure with a Wood Roof	Steel SawtoothTruss / Steel Girders / Wood Purlins		15	Etching Acid Room / 1950	Central Jersey Trading Company
	17	Single Story Masonry Structure with Stuco Exterior and a Wood Roof	Wood Joists	20 ft x 20 ft 400 SF	15	post-1947	R&M Manufacturing, Inc.

TABLE 2-1
Cornell-Dubilier Electronics Superfund Site OU-2 Structures To Be Demolished

Cluster Number	Building Number	Type of Construction	Roof Framing	Dimensions (ft) and Total Area of Building (SF)	Approx. Max Height (ft)	Former Building Designation / Year Constructed[1]	Current Use/Tenant (as of October 2006)
6	10	Single Story, Steel Framing and Exterior Wall Panels with a Steel Roof	Steel Trusses	105 ft x 50 ft 5,350 SF	19	Oil House / 1917-1926	Chamberlain Power & Electric, Inc.
	10A	Single Story, Steel Framing with a Steel Roof	Steel Framing	40 ft x 20 ft 800 SF	10	Waste Shed	Vacant
7	11	Single Story, Steel Arch with Corrugated Steel Exterior Panels	Steel Arches 4' oc with Steel Bridging between arches	200 ft x 40 ft 16,000 SF	20	c. 1947	Complete Liquidation Company
	12	Single Story, Steel Arch with Corrugated Steel Exterior Panels	Steel Arches 4' oc with Steel Bridging between arches		20	1950	Vacant
8	13	Heavily Reinforced Single Story Masonry / Concrete Structure with a Concrete Roof	18' deep Concrete Beams	102 ft x 42 ft 4,300 SF	20	Machine Shop / 1912 or earlier	Nesser Metals & Alloys, LLC
	15	Single Story Masonry Structure with a Wood Roof	Steel Beams / Steel Purlins / Wood Deck	112 ft x 63 ft 7,100 SF	24	Engine Room / 1914	Franz Cabinet Company
	16	Single Story Concrete / Masonry / Steel Structure with a Concrete / Steel Roof	50% Concrete / 50% Steel Beams / Corrugated Steel Deck		40	Boiler House / 1917-1926	Townsend Bros. Moving & Storage
	18	Single Story Masonry Structure with a Half Wood and Half Concrete Roof	Wood Joists	17 ft x 9 ft 200 SF	14	1917-1926	DSC of Newark Enterprises Inc.
9	7	Single Story Wood Framing with a Wood Roof	Wood Joists	65 ft x 25 ft 1,650 SF	20	Carpenter Shop / 1917-1926 for foundation; superstructure likely post-1930	Dove Construction
10	N/A	Steel Water Tower	NA	25 ft Dia. /700 SF	110	N/A	Cell Phone Company
11	14	Single Story Wood Framing with a Wood Roof	Timber Trusses Wood Purlins and Joists	100 ft x 51 ft 5,100 SF	26	1917-1926	Vacant
12	N/A	Steel Oil Storage Tank	NA	27 ft Dia. / 600 SF	30	N/A	N/A

[1] Former Building Designation per Drawing Cornell-Dubilier Electric Corp., ET AL, Dated March 17, 1954

MALCOLM PIRNIE

Project Coordination

SECTION 3

3.1 Coordination with Federal, State and Local Authorities

The project is a Superfund site. Accordingly, the Contractor is responsible for obtaining all local, state, and federal permits or permit equivalencies necessary to perform the work defined in this contract. The Contractor shall submit all permit equivalency applications to the Contracting Officer for review prior to submitting it to the applicable local, state or federal agency. All permits and permit equivalencies are to be obtained in the Contractor's name. All fees associated with the permits and permit equivalencies are to be borne by the Contractor. All hazardous waste manifests are to list the USEPA as the generator. Permits, approvals, or notifications which will require compliance during demolition include, but are not limited to:

- Building/demolition permit;
- Street closure/traffic pattern alteration;
- Local utility notification for abandonment and disconnection of water, power, sewer, telephone and gas service to the various buildings at the site;
- South Plainfield Disaster Preparedness Agency;
- General Construction Stormwater Discharge Permit;
- Soil Erosion and Sediment Control;
- NJDEP Storage Tank Closure Bureau;
- USEPA Asbestos Removal Notification; and
- Trucking and Waste hauler Permits.

Coordination with the local authorities will be required to complete demolition of the buildings which border Hamilton Boulevard, specifically Clusters 1, 2, and 3. The excavation and removal of the footings of these structures along Hamilton Boulevard

may require interruption or relocation of the buried telephone and gas facilities in that area from New Market Avenue to the northern edge of the site. Road closures and detours will need to be coordinated with the municipality of South Plainfield. The specifications indicate the required permit requirements, work plans, environmental monitoring, and control measures to be taken during the project to mitigate project impacts on the surrounding community, as discussed in the following sections.

The USEPA and USACE will coordinate site access and tenant relocation with the site property owner and will arrange public notification meetings to brief local citizen and business owners regarding the project and measures being undertaken to accommodate their needs. The Contractor is to note that all site buildings may not be vacant at the time of demolition of particular clusters and that protective measures for adjacent clusters may be required.

3.2 Site Utilities and Coordination

The utilities which currently serve the site are outlined below. This limited utility site information was collected by Malcolm Pirnie through on-site interviews with site owner management personnel in 2006, and also via a site drawing provided by the site owner and survey mapping performed by Pennoni Associates in 2006 (overhead utilities only). This information is presented on the Site Utility Drawing, Contract Drawing G-53.

3.2.1 Electric Power

Electric power for all buildings and structures except for Building 1 and Building 2 is delivered via an overhead pole-mounted high voltage system which enters the site at the southwest corner at Hamilton Boulevard and New Market Avenue. The distribution line extends eastward along the south side of Building 5 to the rear of Building 12, and then northward to the north side of the oil storage tank. From there it splits and runs north to the south side of Building 9C, west to Building 10, and northeast to the north property line. From the north property line, it extends westward to Buildings 7 and 8. The electrical lines described above are constructed on a PSE&G easement. Buildings 1 and 2 are connected to the power lines on Hamilton Boulevard. The disconnection of the individual power services to the buildings on-site will not pose any significant

difficulties. The close proximity of the poles to the south wall of Building 5 however, may require temporary deenergization or relocation of incoming site power while Building 5 is being demolished. Alternatively, the poles could be braced, or temporary generators could be brought to the site and connected.

3.2.2 Natural Gas

Buried natural gas lines enter the site via the main on Hamilton Boulevard and extend eastward as far as Building 14. There are reportedly individual gas shutoff valves at each building which must be located to disconnect and remove each structure; these valves have not been observed by Malcolm Pirnie. The route of the buried gas piping which was marked by a utility location service in the spring of 2006 is shown on the Site Utility Drawing Contract Drawing G-53.

3.2.3 Telephone and Communication Cable

Telephone cables enter the Site from Hamilton Boulevard primarily between Buildings 1 and 2.

3.2.4 Site Water Systems, Including Fire Protection

The site domestic and fire protection systems are connected to a 36-inch main which transects the Site from southwest to northeast, originating at Building 5 and extending northward across the site on the north side of Building 11 and the south sides of the oil tank and Building 14. The known location of the fire protection loop which serves virtually all of the on-site buildings which have internal sprinklers mounted on their ceilings is shown on the Site Utility Drawing, Contract Drawing G-53. Surface scans prior to excavation and test pit work by the Contractor will be necessary to locate domestic water service connections. Since it is undesirable to repeatedly de-energize and re-energize the fire protection loop at the site, provisions have been included in the Bid Schedule to abandon the fire protection lines on the exterior of the buildings while the system is charged, without the need for shutdowns.

According to the site owner, the capability to disconnect the fire protection loop via existing functioning valves for the site buildings is as follows:

Cluster 5: Buildings 9 and 9A can be isolated as a unit;

Cluster 6: Building 10 can be isolated individually;

Cluster 8: Buildings 13, 15, 16, and 18 can be isolated as a combined unit, however the hydrant in front of Building 15 would need to be shut off, possibly requiring the installation of a new replacement hydrant to meet fire code requirements;

Cluster 7: Buildings 11 and 12 can be isolated individually;

Cluster 11: Building 14 will require an exterior line stop for disconnection while the system is energized;

Cluster 9: Building 7 is not connected.

The remaining Buildings in Clusters 1, 2, 4, and 5 cannot be isolated individually, and would require shutdown of the entire fire protection system for disconnection and demolition to proceed.

3.2.1.1 Building Sanitary Sewers

The building sanitary sewers will require disconnection during demolition of the buildings. The site sanitary sewer runs along the north and eastern sides of the Site and leaves the Site at the intersection of Spicer Avenue and Fulton Street. Flow is generally to the north and east and reportedly connects to the sewer on the east side in the vicinity of Building 13. Surface scans prior to excavation and test pit work by the Contractor will be necessary to locate sanitary sewer service connections.

3.2.1.2 Site Drainage

The location of known site catch basins and drainage piping is shown on the Site Utility Drawing, Contract Drawing G-53. Surface scans prior to excavation and test pit work by the Contractor will be necessary to locate site drainage piping. Roof drainage piping will be disconnected at the perimeter of each building being demolished. The site drainage inlets will be temporarily blocked during construction to prevent the entry of potentially contaminated runoff until the slab restoration, including pavement installation, has been completed. Once slab restoration is completed, the temporary closures will be removed to once again facilitate site drainage.

3.3 Utility Contacts

Coordination with utility owners will be required prior to and during demolition to plan for outages or permanent disconnection and abandonment of utility connections. As previously mentioned, The Site Utility Drawing, Contract Drawing G-53, indicates the known locations of buried and overhead mains and service connections based upon field survey and location by the buried utility locating service (previously called on site by others), and information provided by the site owner. This drawing and the scope of the planned demolition project will be reviewed with the operators of the various utilities which serve the site by Malcolm Pirnie during the 95% completion phase to gain their input and concurrence; the 75% design documents have been forwarded to the utility companies for their information.

A summary of contact information for on-site utilities is provided in Table 3-1 and on the contract drawings.

MALCOLM PIRNIE

TABLE 3-1
UTILITY CONTACT INFORMATION

Utility	Owner	Contact Person	Address	Phone Number
Water	New Jersey American Water	Michael Wolan	120 Raider Boulevard P.O. Box 11204 Belle Mead, NJ 08502	(908) 301-3025
Sanitary Sewer	South Plainfield Sewer Utility	Joseph Glowacki	2480 Plainfield Avenue South Plainfield NJ 07080	(908) 220-7711
Gas	Public Service Electric &Gas Co.	Richard Weger	40 Rock Avenue Plainfield, NJ 07063	(908) 668-3837
Electric	Public Service Electric &Gas Co.	Rudy Torres	472 Weston Canal Road Somerset, NJ 08873	(732) 764-3127
Telephone	Verizon Communications	Gary S. Stevenson	445 Georges Road North Brunswick NJ 08902	(732) 418-2620

MALCOLM PIRNIE

Demolition Components

SECTION 4

4.1 Demolition Sequence

The Government will dictate all building demolition sequencing. Initial demolition efforts may be directed at the buildings along the southern and eastern ends of the Site. Buildings 14, 5A, 10, 11, and 12 can be isolated from existing utilities and removed as discrete entities. Demolition of Cluster 8, which includes Buildings 13, 15, 16, and 18, will preferably be done as a unit since they are all fed by the underground fire suppression system via a common connection on the south side of Building 15. Demolition of Clusters 1, 2, and 5, which comprise more than 50 percent of the site buildings, must be done as a unit since the fire suppression system must be completely shut down for that work to be completed and will require that all site tenants be relocated prior to that point in time. All site tenant relocations will be the responsibility of the Government.

The demolition of the elevated water tower should likely follow the demolition of Building 14 to allow for access by heavy equipment from the east, and should precede the demolition of the buildings in Cluster 8 due to the tower height and proximity to those buildings.

4.2 Cluster Demolition Activities

Demolition activities for each individual cluster will generally include the following activities in the approximate sequence shown. Each of these activities is briefly discussed in the following subsections.

- Prepare Schedules and Submittals
- Implement Site Environmental Monitoring and Controls
- Sample and Characterize Tank Contents and Hazardous Substances
- Removal of PCB and/or Mercury Containing Light Ballasts, Switches and Bulbs
- Remove Asbestos
- Demolish Buildings and Structures
- Handle and Dispose of Waste Materials
- Backfill Placement and Slab Restoration
- Closeout and Demobilization

4.2.1 Schedules and Submittals

The Contractor will be required to develop an overall project schedule and individual cluster project schedules. Additionally, the Contractor will be required to develop work plans which will address the entire site and incorporate the specific measures to be employed for each cluster to be demolished, including Soil Erosion and Sediment Control, Excavation and Material Handling / Reuse, Site Security, Quality Control Traffic Control, Pest and Rodent Control, Waste Management, and Sampling and Analysis. The details for the contents and preparation standards for each of these plans are contained in the contract specifications. Guidance for Dust Control, Spill Prevention, and Site Safety and Health are discussed in Section 5.0, Health and Safety.

4.2.2 Site Environmental Monitoring and Controls

Prior to demolition, the Contractor will be required to mobilize temporary facilities, erect security fencing around the perimeter of the work areas (i.e., a fenceline around each cluster), and enact measures to control the impact of the project on the environment

and the neighboring residents as discussed in the remainder of this section. The Contractor lay down, storage and stockpiling areas will generally be situated in undisturbed areas as shown on Contract Drawing G-03. The locations and conceptual traffic patterns shown on G-03 are schematic, based upon beginning of demolition on the eastern side of the site. Upon removal of each structure, and as the relocation of business tenants from the site proceeds, the available open space will expand and potential traffic interferences will diminish, providing additional opportunities to reroute traffic on-site and to optimize stockpile locations. The Contractor trailers will be located within the area shown on G-03.

4.2.2.1 Site Security

The Contractor will be required to provide continuous security at the construction site during all non-work times, including overnight hours, weekends, and holidays. In addition, prior to commencement of any demolition, excavation, or construction work at any cluster at the Cornell-Dubilier Site, a six-foot high chain link fence with gates will be installed around that cluster undergoing demolition, approximately ten feet from the demolition/excavation limits, as shown on the contract drawings. Upon the completion of all cluster-related remedial action activities, and with the approval of the Contracting Officer, the fencing will be removed.

4.2.2.2 Stormwater Control and Erosion / Sediment Control

Stormwater control is necessary to prevent the flow of uncontaminated runoff into excavations and minimize the quantity of water to be treated and disposed. Means and methods for diversion of stormwater and minimization of potential for erosion will be determined by the Contractor and addressed in the Soil Erosion and Sediment Control Plan. Stormwater control will include sequencing work to limit open areas which would produce runoff into excavations, minimizing the size of excavations left open, covering open areas to prevent contact between contaminated materials and precipitation, and may include temporary sumps and pumping. Any stormwater that does enter the

excavations will be considered impacted and will require collection and treatment prior to disposal.

4.2.2.3 Traffic and Pedestrian Control

The primary construction access to the site is from Hamilton Boulevard at the southwest corner of the site as shown on G-03. Alternate site access could be provided by construction of a temporary access road in the unimproved section of Garibaldi Avenue from Spicer Avenue to the south side of Cluster 7. This would allow construction and haul vehicles to avoid the traffic congestion at the intersection of Hamilton Boulevard and New Market Avenue. It may be necessary to provide alternate site access during the removal of Building 5 due to the proximity of the south side of the building to the main site access and to the incoming power poles on the south side of the building.

Traffic control measures will be necessary on Hamilton Boulevard when trucks are entering and exiting the site. Temporary controls will include the use of signs to advise of construction ahead, flagmen, and temporary barriers such as cones, safety fences, and safety tape. Pedestrian controls are anticipated for the duration of the work along Hamilton Boulevard. Closure of the sidewalk on the east side of Hamilton Boulevard during demolition of the west sides of Clusters 1, 2, and 3 will be necessary to protect the public.

The traffic control plan to be prepared by the Contractor will address traffic and pedestrian control means and methods. The plan will also identify haul routes to and from the site. Haul routes and alternatives will be discussed with the Borough of South Plainfield. Traffic control and pedestrian control within the site will also be addressed in the Contractor's traffic control plan, and will be based upon the particular cluster being demolished, the staging of cluster demolition, and active utilities during various project stages.

4.2.2.4 Pest and Rodent Control

There is a potential for neighborhood disturbances caused by off-site travel of pests and rodents that may be living in structures to be demolished. The Contractor is required to employ a licensed professional exterminator prior to beginning demolition to prepare and submit a pest and rodent control plan, to implement the pest control measures outlined, and to make periodic site visits to review the success of measures in place and revise the practices as necessary. At the conclusion of demolition, the exterminator is required to return to the site to remove all residual bait, traps, and similar devices.

4.2.3 Sampling and Characterization

All liquids, sludges, and solids from tanks, drums, and other containers on-site are to be sampled and the contents analyzed in accordance with the requirements of the specifications. Sampling procedures are to be in accordance with procedures in the appropriate USEPA and NJDEP guidance documents. Field log documentation of all drum sampling activities and a chain of custody for the samples collected are to be maintained at the site.

4.2.4 Removal of Mercury and/or PCB Light Containing Ballasts, Switches and Bulbs

Prior to demolition of each structure , the Contractor is to handle and dispose of all mercury and /or PCB containing lighting ballasts, bulbs, and switches as quantified on the Contract Drawings in accordance with Project Specifications and all applicable regulations.

4.2.5 Asbestos Abatement

Prior to the demolition of each structure which contains asbestos-containing materials as quantified on the contract drawings, the Contractor will provide the necessary notification to the USEPA and will install all temporary equipment, barriers, and

facilities necessary for worker and environmental protection. All asbestos workers are to be trained and certified to perform asbestos removal work. All asbestos removal, transportation and disposal, air monitoring, decontamination, and related tasks are to be performed in accordance with the contract specifications.

4.2.6 Building and Structure Demolition

Demolition of each building and structure will commence following the removal of hazardous substances and verification that all utilities have been disconnected and abandoned. Since recent limited sampling indicates that the existing roofing materials contain asbestos, the roofing must be removed and disposed of separately as asbestos-containing materials prior to demolition of the remainder of the structure. The specifications contain a notice to the Contractor that the steel framing and other building components have not been tested for lead-based paint, but rather it has been assumed that the paint is lead-based. The paint has been tested for PCBs, however, and the results indicate that the paint in some areas does contain PCBs. The Contractor will be required to sample and decontaminate all building steel to be recycled and to coordinate disposal of all building materials within the requirements of the disposal facility operating permits.

PCBs were also detected in paint chip samples and concrete floor and masonry wall cores collected in April 2006. One sample contained over 50,000 ppm, and other samples had levels in the hundreds of ppm. All building materials with concentrations of PCBs greater than 50 ppm (detected in either the paint, window caulking, or core material) must be disposed of as PCB bulk product waste or PCB remediation waste in accordance with applicable regulations (CFR 761.61).

The light weight of the framing systems for the buildings at the site and their relatively low profile do not pose any particular challenges to demolition. There is adequate space around most of the buildings to allow demolition to proceed rather quickly, with the exception of the west side of Clusters 1, 2, and 3. Their proximity to Hamilton Boulevard will require traffic and utility protection and control for removal of both

above- and below-grade sections of the buildings, as previously discussed. Furthermore, the presence of tenants in adjacent or proximate buildings is likely, especially at the outset of demolition activities. The Contractor is required to exhibit extreme caution when operating under this scenario.

The specifications for demolition require the Contractor to minimize the volume of soil removed as part of foundation demolition to reduce the quantity of soil to be tested and disposed/reused of under this project. The Contractor is to propose the equipment and methods which will be employed to limit the size of excavation necessary for foundation removal and to loosen and dislodge soils which may cling to below-grade concrete as it is removed. The Contractor is also required to submit a Excavation and Material Handling / Reuse Plan to outline methods that will be employed to comply with NJDEP on-site soil reuse requirements, should it be determined that excavated soils are within NJDEP contamination guidelines and can be reused on-site (see section 4.2.7 below).

4.2.7 Handling and Disposal of Materials

Contaminated Construction and Demolition (C&D) materials are to be transported directly from the site to a permitted disposal facility.

C&D materials and soil associated with removal of building footings are to be sampled in-situ and analyzed for PCBs per CFR 761.61 and the Contractor's approved sampling plan prepared in accordance with the requirements of the Contract Documents. Soil excavated for test pits and utility disconnection or abandonment will also be sampled in-situ and analyzed for PCBs per CFR 761.61 and the Contractor's approved sampling plan. Any additional sampling for RCRA characteristics may be performed on the material/soil once it is stockpiled in a lined stockpile area as required by the specifications.

Soil with contaminant concentrations below the cleanup criteria specified in the ROD for the site may be reused on-site as foundation excavation backfill. If soils with

contaminant concentrations below the IGWSCC but above the Residential Direct Contact Soil Cleanup Criteria (RDCSCC) or Non-Residential Direct Contact Soil Cleanup Criteria (NRDSCC) are reused on-site, then they must be addressed with a Deed Notice if greater than the RDCSCC, and engineering controls if greater than the NRDSCC. Excavated soils must also possess adequate geotechnical characteristics for reuse. The Contractor is required to outline soil reuse approaches in his Excavation and Material Handling / Reuse Plan.

C&D material disposal is dependent on the material waste characterization, including:

- Non-hazardous
- TSCA PCBs >50 ppm
- RCRA Hazardous
- Mixed TSCA and RCRA, with PCBs > 50 ppm

All C&D materials with PCB concentrations greater than 50 ppm will be sampled, handled, and disposed of as PCB remediation waste in accordance with CFR761.61

As previously discussed in Section 1.4, limited sampling to determine the extent of PCB and mercury and other metals contamination within the buildings at the site was conducted in April 2006 during the Pre-Design Investigation. Material samples were taken for each cluster and included: paint chips, wall cores, floor cores, and window caulking. All results are presented in the Data Summary Report included as Appendix A to the contract specifications.

In order to estimate the quantities of C&D material which will require disposal as PCB remediation waste and/or RCRA hazardous waste, the locations and concentrations of PCBs and RCRA metals (lead) were indicated on the Contract Drawings. The extent of

contamination was indicated for the floors and walls of buildings where contamination was detected using different shading patterns for PCB contamination (TSCA) concentrations greater than 50 ppm and for RCRA Metals exceeding TCLP limitations.

The method for shading of the contaminated floors consisted of plotting the floor core locations on the Contract Drawings and shading the locations where contamination is present at PCB concentrations greater than 50 ppm in the floor cores. For instances where floor contamination does not encompass the entire building, the shading was terminated approximately half way between a contaminated floor core sample and a core sample where PCBs were not detected above 50 ppm. The contaminated floor area quantities were then determined by measuring the shaded floor areas.

The extent of wall contamination for PCBs and Metals was determined by the contamination level, as mentioned above, using the wall core, paint chip, and window caulking samples. Wall shading consisted of plotting the sample locations and shading the locations where contamination is present at PCB concentrations greater than 50 ppm in the paint, window caulking, or wall core samples. For instances where the wall contamination does not extend around the entire building, the shading was terminated approximately half way between a contaminated wall sample and a wall core sample where contamination was not detected above 50 ppm.

Soils disposal is also dependent on sampling and characterization according to the following categories:

- Non-hazardous reuse on-site (< cleanup criteria specified in the ROD and subject to conformance with NJDEP R/N DCSCC)
- Non-hazardous off-site disposal (> cleanup criteria specified in the ROD)
- TSCA PCBs >50 ppm and < 500 ppm

- TSCA PCBs >500 ppm
- RCRA Hazardous
- Mixed TSCA and RCRA, with PCBs > 50 ppm and < 500 ppm
- Mixed TSCA and RCRA, with PCBs >500 ppm

The volume of soils to be disposed of as hazardous materials and the volume of contaminated concrete foundations resulting from contact with contaminated soils was determined by using previous site soil contamination mapping to estimate the percent of area of each building where soil contamination has been documented. Figures 4-12 and 4-27 from the Remedial Investigation (Foster Wheeler 2002) were used to determine the extent of PCB contamination (PCBs > 50ppm and < 500ppm, and >500 ppm). Figures 1 and 2 from the Final Transportation and Disposal Feasibility Study Technical Memorandum (Malcolm Pirnie, July 2006) were used to determine the approximate extent of potential RCRA Metals contamination. As a part of the design process, the boundaries of the different hazardous soils constituents were overlain onto the demolition site plan drawings. The soil trench that will be excavated during removal of slabs and footings was then segmented based on the various types of contaminants shown on the RI and T&D figures, and totaled into the categories listed above. Removed subsurface concrete was similarly segregated into the same categories based on proximate soil concentrations. The footings are assumed to be a standard tee footing approximately one foot wide by four feet deep. The calculated volume of soil excavated for foundation removal includes the immediate area around the footing extending from the outside edge of the footing to grade on a 1:1 side slope.

Estimates by weight of the quantity of each non-hazardous and hazardous waste type and excavated soils are presented in the quantity takeoff in Appendix B.

4.2.8 Backfill and Slab Restoration

The area previously occupied by each building slab will be compacted and graded to remove surface irregularities. A non-woven geotextile will then be placed over the compacted subgrade, the area will be backfilled with dense graded aggregate, compacted to a dry density of 95 percent and graded to a minimum slope of 1.5 percent. The area will then be paved with three inches of bituminous surface course. The Contractor's proposed grading will address site drainage.

4.2.9 Closeout and Demobilization

Closeout and demobilization from the site will occur following the submittal of all required documentation to the Contract Officer, including record drawings, waste manifests, tank closure reports, health and safety clearance documents, and site photographs. Documentation submittal will occur simultaneously with the removal of all temporary facilities, equipment, trash, waste, and debris required by the contract specifications.

MALCOLM PIRNIE

Health and Safety

SECTION 5

5.1 Site Safety and Health Plan (SSHP)

The Contractor is responsible for the health and safety of its employees as well as the actions of its subcontractors. The Contractor will therefore develop, implement, and oversee site safety and health procedures as required by the approved SSHP, prepared by the Contractor's Certified Industrial Hygenist (CIH) and reviewed by the Government Safety Officer in accordance with Technical Specification Sections 01351 Safety, Health, and Emergency Response and 01525 Safety and Occupational Health Requirements. The SSHP will establish, in detail, the protocols necessary for anticipation, recognition, evaluation, and control of hazards associated with each task performed. The SSHP will be considered a living document and will be updated as occupational health and safety conditions change over the course of the project. The minimum requirements of the SSHP are briefly described in the following sections.

5.1.1 Hazard / Risk Analysis

The SSHP is to include a safety and health Hazard/Risk Analysis for each site task and operation to be performed. The Hazard/Risk Analysis is to provide information necessary for determining safety and health procedures, equipment, and training to protect on-site personnel, the environment, and the public. The Hazard/Risk Analysis will include the following components:

- Site Tasks and Objectives Description
- Potential Hazard Description (Physical, Chemical, Biological)

- Air Quality Action Limits (Lead, Dust, Asbestos, Oxygen, Combustible Gas, Volatile Organic Compounds, PCBs, etc)
- Confined Space Entry Program
- Welding Program (Hot Work)
- Activity Hazard Analysis

5.1.2 Staff Organization, Qualifications, and Responsibilities

The Contractor will be required to develop an organizational structure that sets forth lines of authority (chain of command), responsibilities, and communication procedures concerning site safety, health, and emergency response. At a minimum, the roles and responsibilities of the following personnel will be described:

- Safety and Health Manager
- Additional Professional Health and Safety Support Personnel
- Site Safety and Health Officer
- Safety and Health Technicians
- Occupational Physician
- Other Persons Certified in First Aid/CPR

5.1.3 Site Safety Reference Materials

The Contractor will be required to include safety-related references applicable to the project in the SSHP and maintain them at the field office as appropriate for the duration of the project.

5.1.4 Health and Safety Training Program

The SSHP will include a section describing training requirements. Copies of current health and safety training documentation will be submitted prior to initial entry onto the work site and attached to the SSHP. Copies of recent training certificates shall be kept on site, along with

medical surveillance, fit testing, and a physician's or health care provider's written opinion that employee is fit for duty.

5.1.5 Personal Protective Equipment (PPE) Program

The SSHP will detail the minimum PPE ensembles (including respirators) and specific materials from which the PPE components are constructed for each site-specific task and operation to be performed based upon the Hazard/Risk Analysis. Components of levels of protection (B, C, D and modifications) will be relevant to site-specific conditions, including heat and cold stress potential and safety hazards

5.1.6 Medical Surveillance Program

The Safety and Health Manager, in conjunction with the Occupational Physician, will detail, in the Contractor's Safety and Health Program and the SSHP, the Medical Surveillance Program that includes scheduling of examinations, certification of fitness for duty, compliance with OSHA requirements, and information provided to the physician. The Medical Surveillance Program will include the following requirements:

- Frequency of Examinations
- Content of Examinations
- Information Provided to Occupational Physician
- Physician's Written Opinion
- Medical Records

5.1.7 Environmental Monitoring Program

An Environmental Monitoring Plan (EMP) is to be part of the SSHP and is to provide for Exposure Monitoring/Sampling Results for occupational and non-occupational exposures. The EMP will be designed to detect and quantify respirable dust, lead, volatile organic compounds,

oxygen levels, combustible gases, airborne asbestos, and PCBs. Action levels will be established by the Contractor as specified in the Air Quality Limits component of the Hazard/Risk Analysis. A table titled "Minimum Acceptable Community Action Levels" included in specification Section 01351, Health, Safety, and Emergency Response, provides a listing of minimum contaminant concentrations for respirable dust, lead, volatile organic compounds, oxygen levels, combustible gases, and airborne asbestos. Specification Section 13285, Removal and Disposal of PCB Contaminated Soils and Concrete, contains the permissible exposure limit (PEL) for PCBs.

Air contaminant levels will be monitored during each on-site activity in each medium through which contaminants can enter the worker's breathing zone or the neighboring properties (perimeter air sampling). At the beginning of each work activity requiring air monitoring/sampling, the Contractor shall complete monitoring/sampling at the locations and frequencies stated in the SSHP. The Contractor will be required to provide real-time air monitoring equipment for total organic vapors, explosive gases, oxygen, and respirable airborne particulates. Meteorological monitoring will also be conducted.

5.1.8 Heat and Cold Stress Monitoring Program

The Safety and Health Manager will develop a heat stress and cold stress monitoring program for on-site activities. Details of the monitoring program, including schedules for work and rest and physiological monitoring requirements, will be described in the SSHP.

5.1.9 Safety Procedures, Engineering Controls, and Work Practices

The SSHP will describe the standard operating safety procedures, engineering controls, and safe work practices to be implemented for the work covered. These will include, but not be limited to the following:

- General Site Rules and Prohibitions
- Excavation and Trench Safety
- Fall Protection

- Hazard Communication
- Hearing Protection and Noise Control
- Electrical Safety
- Sanitation
- Fire Protection
- Emergency Action Plan

5.1.10 Site Control Measures

To prevent the spread of contamination and control the flow of personnel, vehicles, and materials into and out of work areas, the following site control measures will be established and described in the SSHP:

- Work Zone Designations
- Site Control Log
- Communications Procedure
- Site Security

5.1.11 Contamination Monitoring, Decontamination, and Personal Hygiene Protocol

Personnel entering the exclusion or contamination reduction zones, or are otherwise exposed or subject to exposure to hazardous chemical-contaminated material vapors, liquids, or contaminated solids will adhere to approved contamination monitoring, decontamination, and personal hygiene protocol, which will be detailed in the SSHP.

5.1.12 Equipment Contamination Procedures

Vehicles and equipment will be monitored for contamination and decontaminated prior to leaving the site. The procedures for contamination monitoring and decontamination of vehicles and equipment will be addressed in the SSHP.

5.1.13 Emergency Equipment and First Aid Requirements

The SSHP will describe the emergency and first aid equipment that will be available on site. The following items, at a minimum, are to be maintained on site and be available for immediate use:

- First Aid Equipment
- Emergency Eyewashes and Showers
- Emergency Use Respirators
- Fire Extinguishers

5.1.14 Emergency Response Plan

An Emergency Response Plan will be developed and implemented as a section of the SSHP. In the event of any emergency associated with remedial action, the Contractor is to, without delay, alert all on-site employees that there is an emergency situation; take action to remove or otherwise minimize the cause of the emergency; alert the Contracting Officer's Representative; and institute measures necessary to prevent repetition of the conditions or actions leading to, or resulting in, the emergency.

5.1.15 Accident Prevention Plan

An Accident Prevention Plan will be developed and submitted for government approval prior to work initiation. The plan will be job-specific and include any unusual or unique aspects of the project. Daily safety and health inspections are to be conducted to ensure that the work is being performed in accordance with the SSHP and all USACE and OSHA regulations.

5.1.16 Dust Control Plan

A proposed Dust Control Plan will be included in the SSHP and be incorporated by reference in the Environmental Monitoring Plan. The Dust Control Plan will identify materials, equipment, and methods to be used to monitor and control dust during project operations, including provisions for supplying clean water and trailer-mounted water spraying equipment. Visible dust located on the floors of buildings to be demolished will be handled as if contaminated with PCBs and will be cleaned up and removed prior to beginning demolition activities. The Contracting Officer will be consulted on the determination of proper handling procedures.

5.1.17 Safety and Health Phase-Out Report

A Safety and Health Phase-Out Report will be submitted within ten days following completion of the work, prior to final acceptance of the work. At a minimum, the report will include the following:

- Summary of Overall Safety Performance
- Final Decontamination Documentation
- Summary of Exposure Monitoring and Air Sampling
- Signature of Safety and Health Manager and SSHO

The following documents are required and must be evaluated, updated, and provided to the USACE along with the Contractor's Health and Safety Plan:

- Written Hazard Communication Program
- Written Noise and Hearing Conservation Program
- Written Confined Space Entry Program
- Excavation Safety Program
- Emergency Response Plan
- Emergency Evacuation Procedure
- Written Personal Protective Equipment Program
- Respiratory Protection Program

- Medical Surveillance Program

5.2 Site Control and Work Zone

The building demolition and excavation work is being performed in phases (to be determined by the USEPA). Prior to the commencement of work in a given cluster, a six-foot high chain-link fence will be constructed around the entire cluster area. The contractor shall follow the Health and Safety requirements set forth in the technical specifications for site control.

Exclusion and work zones will be set up and maintained in accordance with the Contractor's Excavation and Material Handling Plan and Site Safety and Health Plan.

5.3 Air Monitoring

Equipment for continuous perimeter and personal air monitoring will be required for the duration of demolition, excavation, backfilling, and restoration activities at this property. Air monitoring will include equipment and monitoring frequencies required as described in Specification Section 01351 Safety, Health, and Emergency Response. Monitoring parameters and action levels are as indicated in Section 01351.

Construction Quantity Takeoff

SECTION 6

6.1 Construction Quantities

Material quantities for masonry, wood, glass, steel framing members, above-grade concrete, and roofing materials are tabulated on individual sheets for each building cluster in the quantity takeoff spreadsheet which is provided in Appendix A. A summary sheet for all clusters is also included in the quantity takeoff spreadsheet. The non-hazardous fraction of these materials will be removed and disposed of off-site under the lump sum items for Above Grade Demolition and Off-Site Disposal which are included in the Bid Schedule. Roofing materials which contain asbestos are quantified on the Contract Drawings. Non-porous materials such as steel which are to be recycled must first be sampled, and if necessary, decontaminated in accordance with 40 CFR 761.79 Decontamination Standards and Procedures.

The quantity takeoff spreadsheet also includes material quantities for each building cluster for hazardous above-and below-grade concrete and masonry to be disposed of as PCB remediation waste, non-hazardous and hazardous soils, and quantities for bituminous surface course, dense graded aggregate, and geotextile. These material quantities are represented on the Bid Schedules as unit price items. The unit quantities shown on the quantity takeoff spreadsheet for these items have been rounded up on the Bid Schedules. The construction cost estimate backup data to be provided under separate cover includes a detailed explanation of assumptions and clarifications.

6.2 Construction Schedule

A detailed construction schedule meeting the requirements of Specification Section 01320A, Project Schedule is required to be prepared and provided by the Contractor based upon the scope of work awarded and the sequence of demolition approved by the USACE.

MALCOLM PIRNIE

Design Drawings

SECTION 7

7.1 Design Drawings

The design drawings for the demolition are bound separately and include the following:

DRAWING NO.	TITLE
G-01	Cover Sheet
G-02	Index of Drawings, Legend, Abbreviations
G-03	Site Plan/Cluster Designations
G-04	Cluster 1-BLDGS 1, 1A, 1B, 1C, 1D, 6 Plan And Elevations
G-05	Cluster 1-BLDGS 1, 1A, 1B Miscellaneous Waste
G-06	Cluster 1-BLDGS 1C, 1D, 6 Miscellaneous Waste
G-07	Cluster 1-PCB Remediation Waste Floors and Walls
G-08	Cluster 1-BLDGS 1, 1A, 1B, 1C, 1D, 6 Photographs
G-09	Cluster 2-BLDGS 2, 2A, 3/4, 4A Plan And Elevations
G-10	Cluster 2-BLDGS 2, 2A, 3/4 Miscellaneous Waste
G-11	Cluster 2-BLDG 4A Miscellaneous Waste
G-12	Cluster 2-PCB Remediation Waste Floors and Walls
G-13	Cluster 2-BLDGS 2, 2A, 3/4, 4A Photographs
G-14	Cluster 3-BLDGS 5, 5A Plan And Elevations

Design Drawings

MALCOLM PIRNIE

DRAWING NO.	TITLE
G-15	Cluster 3-BLDGS 5, 5A Miscellaneous Waste
G-16	Cluster 3-PCB Remediation Waste Floors and Walls
G-17	Cluster 3-BLDGS 5, 5A Photographs
G-18	Cluster 4-BLDG 8 Plan And Elevations
G-19	Cluster 4-BLDG 8 Miscellaneous Waste
G-20	Cluster 4-BLDG 8 Photographs
G-21	Cluster 5-BLDGS 9, 9A, 9B, 9C, 17 Plan And Elevations
G-22	Cluster 5-BLDGS 9, 9A Miscellaneous Waste
G-23	Cluster 5-BLDGS 9B, 9C, 17 Miscellaneous Waste
G-24	Cluster 5-PCB Remediation Waste Floors and Walls
G-25	Cluster 5-BLDGS 9, 9A, 9B, 9C, 17 Photographs
G-26	Cluster 6-BLDGS 10, 10A Plan And Elevations
G-27	Cluster 6-BLDG 10 Miscellaneous Waste
G-28	Cluster 6-PCB Remediation Waste Floors and Walls
G-29	Cluster 6-BLDGS 10, 10A Photographs
G-30	Cluster 7-BLDGS 11, 12 Plan And Elevations
G-31	Cluster 7-BLDGS 11, 12 Miscellaneous Waste
G-32	Cluster 7-PCB Remediation Waste Floors and Walls
G-33	Cluster 7-BLDGS 11, 12 Photographs
G-34	Cluster 8-BLDG 13 Plan And Elevations
G-35	Cluster 8-BLDG 13 Miscellaneous Waste
G-36	Cluster 8- RCRA Hazardous Masonry Walls
G-37	Cluster 8-BLDGS 15, 16, 18 Plan Elevations
G-38	Cluster 8-BLDGS 15, 16, 18 Miscellaneous Waste
G-39	Cluster 8- RCRA Hazardous Masonry Walls

DRAWING NO.	TITLE
G-40	Cluster 8-BLDGS 13, 15, 16, 18 Photographs
G-41	Cluster 9-BLDG 7 Plan And Elevations
G-42	Cluster 9-BLDG 7 Miscellaneous Waste
G-43	Cluster 9-BLDG 7 Photographs
G-44	Cluster 10-Water Tower Plan And Elevations
G-45	Cluster 10-Water Tower Miscellaneous Waste
G-46	Cluster 10-Water Tower Photographs
G-47	Cluster 11-BLDG 14 Plan And Elevations
G-48	Cluster 11-BLDG 14 Miscellaneous Waste
G-49	Cluster 11-BLDG 14 Photographs
G-50	Cluster 12-Oil Tank Plan And Elevations
G-51	Cluster 12-Oil Tank Miscellaneous Waste
G-52	Cluster 12-Oil Tank Photographs
G-53	Site Utility Plan
G-54	Site Details 1
G-55	Site Details 2

7.2 Design Specifications

The technical specifications (bound separately) that are applicable to the demolition of the buildings on the Cornell-Dubilier property include the following:

DOCUMENTS 00 INTRODUCTORY, BIDDING, AND CONTRACT REQUIREMENTS BY USACE

00101 BID SCHEDULES
00102 LIST OF DRAWINGS

DIVISION 01 GENERAL REQUIREMENTS

01110 SUMMARY OF WORK
01140 WORK RESTRICTIONS
01201 PRE-CONSTRUCTION AND PRE-WORK CONFERENCES
01202 PROJECT PROGRESS MEETINGS
01270A MEASUREMENT AND PAYMENT
01312A QUALITY CONTROL SYSTEM (QCS)
01320 PROJECT SCHEDULE
01330 SUBMITTAL PROCEDURES
01351 SAFETY, HEALTH, AND EMERGENCY RESPONSE (HTRW/UST)
01356A STORM WATER POLLUTION PREVENTION MEASURES
01380 PROJECT PHOTOGRAPHS
01381 VIDEOTAPING
01420 SOURCES FOR REFERENCE PUBLICATIONS
01450A CHEMICAL DATA QUALITY CONTROL
01451A CONTRACTOR QUALITY CONTROL
01500A TEMPORARY CONSTRUCTION FACILITIES
01525 SAFETY AND OCCUPATIONAL HEALTH REQUIREMENTS
01540 SECURITY
01550 SURVEYING
01580 PROJECT IDENTIFICATION
01700 REMEDIAL PACKAGE CLOSEOUT AND RECORD DOCUMENTS

DIVISION 02 SITE CONSTRUCTION

02212 HANDLING AND DISPOSAL OF DRUMMED AND HAZARDOUS MATERIALS
02220 DEMOLITION

02310	EXCAVATION
02320	BACKFILL AND COMPACTION
02350	TRANSPORTATION AND DISPOSAL
02373	GEOTEXTILE
02650	STORAGE TANK REMOVAL
02742	HOT MIX BITUMINOUS PAVEMENT
02821A	FENCING

DIVISION 03 Not Used

DIVISION 04 Not Used

DIVISION 05 Not Used

DIVISION 06 Not Used

DIVISION 07 Not Used

DIVISION 08 Not Used

DIVISION 09 Not Used

DIVISION 10 Not Used

DIVISION 11 Not Used

DIVISION 12 Not Used

DIVISION 13 SPECIAL CONSTRUCTION

13280A	ASBESTOS HAZARD CONTROL ACTIVITIES
13281A	LEAD BASED PAINT AWARENESS
13284	REMOVAL AND DISPOSAL OF POLYCHLORINATED BIPHENYLS (PCBs)
13285	REMOVAL AND DISPOSAL OF PCB CONTAMINATED SOILS AND CONCRETE
13286	HANDLING OF LIGHTING BALLASTS AND LAMPS CONTAINING PCBs AND MERCURY

DIVISION 14 Not Used

DIVISION 15 Not Used

DIVISION 16 Not Used

Appendix A Data Summary Report OU2 - Building Demolition

Appendix A
Quantity Takeoffs

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site
OU-2 - Building Demolition
Quantity Take-Off
Summary Sheet

QUANTITY SUMMARY

Cluster	Masonry (Tons)	Glass (Tons)	Concrete (Tons)	Steel (Tons)	Wood (Tons)	Roofing Materials (Tons)	Excavation (Tons)	Slab Restoration		
								Bit. Surface Course (SY)	Dense Graded Aggregate (Tons)	Geotextile (SF)
1	1,022	36	3,165	32	187	403	2,274	7,309	9,744	65,773
2	1,281	14	3,740	14	127	476	2,445	9,212	12,157	82,895
3	631	7	1,679	9	85	319	1,474	5,881	7,552	52,920
4	427	5	1,205	1.5	N/A	85	786	1,970	2,957	17,728
5	695	20	2,351	49	120	448	2,043	6,287	8,737	56,580
6	N/A	N/A	492	59	N/A	N/A	830	1,231	2,028	11,080
7	N/A	N/A	892	99	N/A	N/A	1,550	2,983	4,743	26,840
8	812	9	3,031	22	13	87	1,433	2,422	11,885	21,794
9	N/A	N/A	169	N/A	9	12	322	454	755	4,089
10	N/A	N/A	0	23	N/A	N/A	254	218	460	1,963
11	N/A	N/A	261	N/A	19	38	355	963	1,167	8,662
12	N/A	N/A	38	24	N/A	N/A	206	193	419	1,735
Total	4,868	89	17,023	332	559	1,868	13,974	39,122	62,606	352,059

Notes:
1. Assumed density of 1.6 tons/cy for masonry.
2. Assumed density of 5 psf for glass.
3. Assumed density of 2 tons/CY for concrete.
4. Weight of light weight steel is 490 lbs/cf
5. Assumed density of 4 psf for wood roofing.
6. Assumed density of 15 psf for roofing materials.
7. Assumed density of 120 pcf for soil.
8. Assumed density of 140 pcf for dense graded aggregate.

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 1

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		ASSUMPTIONS / REMARKS
BUILDING AREA								
Area (Building 1, 1A, 1B, 1C, & 1D)			As Measured on the Drawings			49,679	SF	
Area (Building 6)			As Measured on the Drawings			4,015	SF	
					Total:	53,694	SF	
MASONRY[1]								
BUILDING 1, 1A, & 1D								Non-hazardous masonry quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous masonry quantities are included under the unit price item for Demolition, Handling / Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm. 20% deducted for windows see note 1.
Wall - PCB Contaminated > 50 ppm	337	x	1	x	25	399	Tons	
					Total:	399	Tons	
BUILDING 1B & 1C								Non-hazardous masonry quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous masonry quantities are included under the unit price item for Demolition, Handling / Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm. 20% deducted for windows see note 1.
Wall - PCB Contaminated > 50 ppm	506	x	1	x	17	408	Tons	
					Total:	408	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 1

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		ASSUMPTIONS / REMARKS
BUILDING 6								Non-hazardous masonry quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous masonry quantities are included under the unit price item for Demolition, Handling / Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm. 20% deducted for windows see note 1.
Wall - PCB Contaminated > 50 ppm	227	x	1	x	20	215	Tons	
					Total:	215	Tons	
Glass[1]								
BUILDING 1, 1A, & 1D								Glass quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. 80% deducted for masonry see note 1.
Wall	337	x	N/A	x	25	4.2	Tons	
					Total:	4	Tons	
BUILDING 1B & 1C								Glass quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. 80% deducted for masonry see note 1.
Wall	506	x	N/A	x	17	4.3	Tons	
					Total:	4	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 1

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		ASSUMPTIONS / REMARKS
BUILDING 1B & 1C - SAW TOOTH TRUSSES								
Glass (Building 1B & 1C) for 6 Trusses (80% Deducted for Wood and Roofing Materials)	202	x	N/A	x	41	25	Tons	Glass quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. 80% deducted for Wood and Roofing Materials.
					Total:	25	Tons	
BUILDING 6								
Wall	227	x	N/A	x	20	2.3	Tons	Glass quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. 80% deducted for masonry see note 1.
					Total:	2	Tons	
WOOD[2]								
Roof Decking (Building 1, 1A, 1B, 1C, & 1D)	49,679	SF As Measured On Drawings		x	N/A	99	Tons	Wood quantities are included in Bid Schedule under the lump sum item for Asbestos Abatement.
Additional Roof Decking (Building 1B & 1C) for 6 Saw Tooth Trusses (20% Deducted for Glass)	202	x	41	x	N/A	80	Tons	
Roof Decking (Building 6)	4,015	SF As Measured On Drawings		x	N/A	8	Tons	
					Total:	187	Tons	

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 1

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		ASSUMPTIONS / REMARKS
ROOFING MATERIALS[3]								
Roofing Materials (Building 1, 1A, 1B, 1C, & 1D)	49,679	SF As Measured On Drawings		x	N/A	373	Tons	Roofing Material quantities are included in Bid Schedule under the lump sum item for Asbestos Abatement.
Roofing Materials (Building 6)	4,015	SF As Measured On Drawings		x	N/A	30	Tons	
					Total:	403	Tons	
STEEL FRAMING MEMBERS								
BUILDING 1, 1A, & 1D								
15 Columns - W12 x 65 at 25' High	15	x	N/A	x	25	12	Tons	Assumed column weight of 65 pounds per foot.
Beams - W18 x 35	268	x	N/A	x	N/A	5	Tons	Assumed beam weight of 35 pounds per foot.
					Total:	17	Tons	
BUILDING 1B & 1C								
12 Columns - W12 x 65 at 17' High	12	x	N/A	x	17	7	Tons	Assumed column weight of 65 pounds per foot.
Beams - W18 x 35	404	x	N/A	x	N/A	7	Tons	Assumed beam weight of 35 pounds per foot.
					Total:	14	Tons	
BUILDING 6								
1 Columns - W12 x 65 at 20' High	1	x	N/A	x	20	1	Tons	Assumed column weight of 65 pounds per foot.
Beams - W18 x 35	51	x	N/A	x	N/A	1	Tons	Assumed beam weight of 35 pounds per foot.
					Total:	2	Tons	

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 1

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		ASSUMPTIONS / REMARKS
CONCRETE[4]								
Above Grade Concrete								
Slab on Grade (Building 1, 1A, 1B, 1C, & 1D) - Non-Hazardous	32,127	SF As Measured On Drawings		x	0.51	1,223	Tons	Non-hazardous masonry quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous masonry quantities are included under the unit price item for Demolition, Handling / Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm.
Slab on Grade (Building 1B & 1C) - PCB Contaminated > 50 ppm	15,911	SF As Measured On Drawings		x	0.51	606	Tons	
Slab on Grade (Building 6) - PCB Contaminated > 50 ppm	4,015	SF As Measured On Drawings		x	0.58	173	Tons	
Roof (Building 6) - Slab	99	x	51	x	1	374	Tons	
Roof (Building 6) - 6 Beams (2' Deep x 1' Wide)	306	x	2	x	1	23	Tons	
					Total:	2,399	Tons	
Below Grade Concrete								
Footings (Standard Tee) - Non-Hazardous	105	x	Refer to Excavation Section on Assumptions Sheet			47	Tons	Non-hazardous below grade concrete quantities are included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm.
Footings (Standard Tee) - TSCA Waste > 50 ppm	352	x	Refer to Excavation Section on Assumptions Sheet			156	Tons	
Footings (Standard Tee) - RCRA Waste - (Failing TCLP)	455	x	Refer to Excavation Section on Assumptions Sheet			202	Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA > 50 ppm)	811	x	Refer to Excavation Section on Assumptions Sheet			360	Tons	
					Total:	766	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 1

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		ASSUMPTIONS / REMARKS
EXCAVATION (1:1 SIDE SLOPES)[5]								
Excavation for Footers - Non-Hazardous	105	x	Refer to Excavation Section on Assumptions Sheet			139	Tons	
Excavation for Footers - TSCA Waste < 500 ppm	280	x	Refer to Excavation Section on Assumptions Sheet			370	Tons	
Excavation for Footers - TSCA Waste > 500 ppm	72	x	Refer to Excavation Section on Assumptions Sheet			95	Tons	Excavation quantities are included in Bid Schedule under unit price items for hazardous and non-hazardous soil disposal and reuse.
Excavation for Footers - RCRA Waste - (Failing TCLP)	455	x	Refer to Excavation Section on Assumptions Sheet			601	Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA < 500 ppm)	604	x	Refer to Excavation Section on Assumptions Sheet			797	Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA > 500 ppm)	207	x	Refer to Excavation Section on Assumptions Sheet			273	Tons	
					Total:	2,274	Tons	
SLAB RESTORATION (SLAB + 20 feet)								
3-inch Bituminous Surface Course (Building 1, 1A, 1B, 1C, & 1D)	281	x	204	x	N/A	6,370	SY	See Assumptions Sheet for calculations.
3-inch Bituminous Surface Course (Building 6)	119	x	71	x	N/A	939	SY	See Assumptions Sheet for calculations.
					Total:	7,309	SY	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site
OU-2 - Building Demolition
Quantity Take-Off
Cluster 1

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		ASSUMPTIONS / REMARKS
9-inch Dense Graded Aggregate Subbase (Building 1, 1A, 1B, 1C, & 1D)[6]	281	x	204	x	0.75	5,828	Tons	See Assumptions Sheet for calculations.
9-inch Dense Graded Aggregate Subbase (Building 6)[6]	119	x	71	x	0.75	620	Tons	See Assumptions Sheet for calculations.
Additional Dense Graded Aggregate For Trench & Soil Removed From Site[6]	N/A	x	N/A	x	N/A	3,296	Tons	Equals volume for footers and soil removed from site.
					Total:	9,744	Tons	
Geotextile (Building 1, 1A, 1B, 1C, & 1D)	281	x	204	x	N/A	57,324	SF	
Geotextile (Building 6)	119	x	71	x	N/A	8,449	SF	
					Total:	65,773	SF	

Notes:
1. 20% deducted from total wall area for windows. Assumed 1.30 tons/cy for 8 inch CMU w/ 1/3 voids and 0.3 tons/cy of brick for a total of 1.6 tons/cy for masonry and 5 psf for glass.
2. Assumed density of 4 psf for wood roofing.
3. Assumed density of 3 psf for 1 layer of asphalt shingles, assuming 5 layers, the total density is 15 psf for roofing materials.
4. Assumed density of 2 tons/CY for concrete.
5. Assumed density of 120 pcf for soil.
6. Assumed density of 140 pcf for dense graded aggregate.

General Notes:
1. Unit quantities shown on this spread sheet for below grade concrete, excavation, bituminous surface coarse, dense graded aggregate, and geotextile have been rounded up to the nearest 10 on the Bid Schedule and Opinion of Probable Construction Cost for contingency purposes. See Pricing Back-Up Derivations (provided under separate cover) for further assumptions and clarifications.

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 2

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
BUILDING AREA								
Area (Building 2, 2A, 3/4, 4A)	As Measured on the Drawings					58,780	SF	
					Total:	58,780	SF	
MASONRY[1]								
Wall - PCB Contaminated > 50 ppm	1,351	x	1	x	20	1,281	Tons	Non-hazardous masonry quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous masonry quantities are included under the unit price item for Demolition, Handling / Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm. 20% deducted for windows see note 1.
					Total:	1,281	Tons	
Glass[1]								
Wall	1,351	x	N/A	x	20	14	Tons	Glass quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. 80% deducted for masonry see note 1.
					Total:	14	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 2

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
WOOD[2]								
Roof Decking (Building 2, 2A, 3/4, 4A)	58,780	SF As Measured On Drawings		x	N/A	118	Tons	Wood quantities included in Bid Schedule under the lump sum item for Asbestos Abatement.
Roof Decking (Building 3/4) Raised Portions	60	x	40	x	N/A	5	Tons	
Roof Decking (Building 4A) Raised Portions	75	x	30	x	N/A	5	Tons	
					Total:	127	Tons	
ROOFING MATERIALS[3]								
Roofing Materials (Building 2, 2A, 3/4, 4A)	58,780	SF As Measured On Drawings		x	N/A	441	Tons	Roofing Material quantities included in Bid Schedule under the lump sum item for Asbestos Abatement.
Roofing Materials (Building 3/4) Raised Portions	60	x	40	x	N/A	18	Tons	
Roofing Materials (Building 4A) Raised Portions	75	x	30	x	N/A	17	Tons	
					Total:	476	Tons	
STEEL FRAMING MEMBERS								
15 Columns - W12 x 65 at 20' High	15	x	N/A	x	20	10	Tons	Assumed column weight of 65 pounds per foot.
Beams - W18 x 35	244	x	N/A	x	N/A	4	Tons	Assumed beam weight of 35 pounds per foot.
					Total:	14	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 2

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
CONCRETE[4]								
Above Grade Concrete								Non-hazardous concrete quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous concrete quantities are included under the unit price item for Demolition, Handling / Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm.
Slab on Grade (Buildings 2, 2A, 3/4 & 4A) - Non-Hazardous	58,780	SF As Measured On Drawings	x	0.67		2,917	Tons	
				Total:		2,917	Tons	
Below Grade Concrete								
Footings (Standard Tee) - Non-Hazardous	135	x	Refer to Excavation Section on Assumptions Sheet			60	Tons	Non-hazardous below grade concrete quantities are included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm.
Footings (Standard Tee) - TSCA Waste > 50 ppm	747	x	Refer to Excavation Section on Assumptions Sheet			332	Tons	
Footings (Standard Tee) - RCRA Waste - (Failing TCLP)	10	x	Refer to Excavation Section on Assumptions Sheet			4	Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA > 50 ppm)	960	x	Refer to Excavation Section on Assumptions Sheet			427	Tons	
				Total:		823	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 2

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
EXCAVATION (1:1 SIDE SLOPES)[5]								
Excavation for Footers - Non-Hazardous	135	x	Refer to Excavation Section on Assumptions Sheet			178	Tons	Excavation quantities included in Bid Schedule under unit price items for hazardous and non-hazardous soil disposal and reuse.
Excavation for Footers - TSCA Waste < 500 ppm	159	x	Refer to Excavation Section on Assumptions Sheet			210	Tons	
Excavation for Footers - TSCA Waste > 500 ppm	588	x	Refer to Excavation Section on Assumptions Sheet			776	Tons	
Excavation for Footers - RCRA Waste - (Failing TCLP)	10	x	Refer to Excavation Section on Assumptions Sheet			13	Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA < 500 ppm)	304	x	Refer to Excavation Section on Assumptions Sheet			401	Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA > 500 ppm)	656	x	Refer to Excavation Section on Assumptions Sheet			866	Tons	
					Total:	2,445	Tons	
SLAB RESTORATION (SLAB + 20 feet)								
3-inch Bituminous Surface Course	295	x	281	x	N/A	9,212	SY	See Assumptions Sheet for calculations.
9-inch Dense Graded Subbase Aggregate[6]	295	x	281	x	0.75	8,631	Tons	See Assumptions Sheet for calculations.
Additional Dense Graded Aggregate For Trench & Soil Removed From Site[6]	N/A	x	N/A	x	N/A	3,526	Tons	Equals volume for footers and soil removed from site.
					Total:	12,157	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 2

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
Geotextile Fabric	295	x	281	x	N/A	82,895	SF	

Notes:

1. 20% deducted from total wall area for windows. Assumed 1.30 tons/cy for 8 inch CMU w/ 1/3 voids and 0.3 tons/cy of brick for a total of 1.6 tons/cy for masonry and 5 psf for glass.
2. Assumed density of 4 psf for wood roofing.
3. Assumed density of 3 psf for 1 layer of asphalt shingles, assuming 5 layers, the total density is 15 psf for roofing materials.
4. Assumed density of 2 tons/CY for concrete.
5. Assumed density of 120 pcf for soil.
6. Assumed density of 140 pcf for dense graded aggregate.

General Notes:

1. Unit quantities shown on this spread sheet for below grade concrete, excavation, bituminous surface coarse, dense graded aggregate, and geotextile have been rounded up to the nearest 10 on the Bid Schedule and Opinion of Probable Construction Cost for contingency purposes. See Pricing Back-Up Derivations (provided under separate cover) for further assumptions and clarifications.

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 3

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
BUILDING AREA								
Area			As Measured on the Drawings			42,567	SF	
					Total:	42,567	SF	
MASONRY[1]								
Wall - PCB Contaminated > 50 ppm	888	x	1	x	15	631	Tons	Non-hazardous masonry quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous masonry quantities are included under the unit price item for Demolition, Handling / Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm. 20% deducted for windows see note 1.
					Total:	631	Tons	
Glass[1]								
Wall	888	x	N/A	x	15	6.7	Tons	Glass quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. 80% deducted for masonry see note 1.
					Total:	7	Tons	
WOOD[2]								
Roof Decking	42,567	SF	As Measured On Drawings	x	N/A	85	Tons	Wood quantities included in Bid Schedule under the lump sum item for Asbestos Abatement.
					Total:	85	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 3

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
ROOFING MATERIALS[3]								
Roofing Materials	42,567	SF As Measured On Drawings		x	N/A	319	Tons	Roofing Material quantities included in Bid Schedule under the lump sum item for Asbestos Abatement.
					Total:	319	Tons	
STEEL FRAMING MEMBERS								
10 Columns - W12 x 65 at 20' High	10	x	N/A	x	20	7	Tons	Assumed column weight of 65 pounds per foot.
Beams - W18 x 35	162	x	N/A	x	N/A	3	Tons	Assumed beam weight of 35 pounds per foot.
					Total:	9	Tons	
CONCRETE[4]								
Above Grade Concrete								Non-hazardous concrete quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous concrete quantities are included under the unit price item for Demolition, Handling / Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm.
Slab on Grade - PCB Contaminated > 50 ppm	42,567	SF As Measured On Drawings		x	0.38	1,182	Tons	
					Total:	1,182	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 3

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
Below Grade Concrete								
Footings (Standard Tee) - Non-Hazardous	180	x	Refer to Excavation Section on Assumptions Sheet			80	Tons	Non-hazardous below grade concrete quantities are included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm.
Footings (Standard Tee) - TSCA Waste > 50 ppm	591	x	Refer to Excavation Section on Assumptions Sheet			263	Tons	
Footings (Standard Tee) - RCRA Waste - (Failing TCLP)	22	x	Refer to Excavation Section on Assumptions Sheet			10	Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA > 50 ppm)	324	x	Refer to Excavation Section on Assumptions Sheet			144	Tons	
					Total:	496	Tons	
EXCAVATION (1:1 SIDE SLOPES)[5]								
Excavation for Footers - Non-Hazardous	180	x	Refer to Excavation Section on Assumptions Sheet			238	Tons	Excavation quantities included in Bid Schedule under unit price items for hazardous and non-hazardous soil disposal and reuse.
Excavation for Footers - TSCA Waste < 500 ppm	211	x	Refer to Excavation Section on Assumptions Sheet			279	Tons	
Excavation for Footers - TSCA Waste > 500 ppm	380	x	Refer to Excavation Section on Assumptions Sheet			502	Tons	
Excavation for Footers - RCRA Waste - (Failing TCLP)	22	x	Refer to Excavation Section on Assumptions Sheet			29	Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA < 500 ppm)	324	x	Refer to Excavation Section on Assumptions Sheet			428	Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA > 500 ppm)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
					Total:	1,474	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 3

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
SLAB RESTORATION (SLAB + 20 feet)								
3-inch Bituminous Surface Course	294	x	180	x	N/A	5,881	SY	See Assumptions Sheet for calculations.
9-inch Dense Graded Subbase Aggregate[6]	294	x	180	x	0.75	5,501	Tons	See Assumptions Sheet for calculations.
Additional Dense Graded Aggregate For Trench & Soil Removed From Site[6]	N/A	x	N/A	x	N/A	2,051	Tons	Equals volume for footers and soil removed from site.
					Total:	7,552	Tons	
Geotextile Fabric	294	x	180	x	N/A	52,920	SF	

Notes:
1. 20% deducted from total wall area for windows. Assumed 1.30 tons/cy for 8 inch CMU w/ 1/3 voids and 0.3 tons/cy of brick for a total of 1.6 tons/cy for masonry and 5 psf for glass.
2. Assumed density of 4 psf for wood roofing.
3. Assumed density of 3 psf for 1 layer of asphalt shingles, assuming 5 layers, the total density is 15 psf for roofing materials.
4. Assumed density of 2 tons/CY for concrete.
5. Assumed density of 120 pcf for soil.
6. Assumed density of 140 pcf for dense graded aggregate.

General Notes:
1. Unit quantities shown on this spread sheet for below grade concrete, excavation, bituminous surface coarse, dense graded aggregate, and geotextile have been rounded up to the nearest 10 on the Bid Schedule and Opinion of Probable Construction Cost for contingency purposes. See Pricing Back-Up Derivations (provided under separate cover) for further assumptions and clarifications.

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 4

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
BUILDING AREA								
Area			As Measured on the Drawings			11,283	SF	
					Total:	11,283	SF	
MASONRY[1]								
Wall - Non-Hazardous	614	x	1	x	14.67	427	Tons	Non-hazardous masonry quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous masonry quantities are included under the unit price item for Demolition, Handling / Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm. 20% deducted for windows see note 1.
					Total:	427	Tons	
Glass[1]								
Wall	614	x	N/A	x	14.67	5	Tons	Glass quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site. 80% deducted for masonry see note 1.
					Total:	5	Tons	

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 4

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
ROOFING MATERIALS[2]								
Roofing Materials	11,283	SF As Measured On Drawings		x	N/A	85	Tons	Roofing Materials quantities included in Bid Schedule under the lump sum item for Asbestos Abatement.
					Total:	85	Tons	
STEEL FRAMING MEMBERS								
3 Columns - HSS6 x 6 x 1/2 at 14.67' High	3	x	N/A	x	14.67	0.9	Tons	Assumed column weight of 42 pounds per foot.
Beams - W8 x 24	44	x	N/A	x	N/A	0.5	Tons	Assumed beam weight of 24 pounds per foot.
					Total:	1.5	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 4

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
CONCRETE[3]								
Above Grade Concrete								Non-hazardous concrete quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous concrete quantities are included under the unit price item for Demolition, Handling / Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm.
Slab on Grade - Non-Hazardous	11,283	SF As Measured On Drawings	x		0.63	522	Tons	
Roof	11,283	SF As Measured On Drawings	x		0.5	418	Tons	
					Total:	940	Tons	
Below Grade Concrete								
Footings (Standard Tee) - Non-Hazardous	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	Non-hazardous below grade concrete quantities are included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm.
Footings (Standard Tee) - TSCA Waste > 50 ppm	336	x	Refer to Excavation Section on Assumptions Sheet			149	Tons	
Footings (Standard Tee) - RCRA Waste - (Failing TCLP)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA > 50 ppm)	260	x	Refer to Excavation Section on Assumptions Sheet			116	Tons	
					Total:	265	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 4

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
EXCAVATION (1:1 SIDE SLOPES)[5]								
Excavation for Footers - Non-Hazardous	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	Excavation quantities included in Bid Schedule under unit price items for hazardous and non-hazardous soil disposal and reuse.
Excavation for Footers - TSCA Waste < 500 ppm	67	x	Refer to Excavation Section on Assumptions Sheet			88	Tons	
Excavation for Footers - TSCA Waste > 500 ppm	269	x	Refer to Excavation Section on Assumptions Sheet			355	Tons	
Excavation for Footers - RCRA Waste - (Failing TCLP)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA < 500 ppm)	120	x	Refer to Excavation Section on Assumptions Sheet			158	Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA > 500 ppm)	140	x	Refer to Excavation Section on Assumptions Sheet			185	Tons	
					Total:	786	Tons	
SLAB RESTORATION (SLAB + 20 feet)								
3-inch Bituminous Surface Course	277	x	64	x	N/A	1,970	SY	See Assumptions Sheet for calculations.
9-inch Dense Graded Subbase Aggregate[5]	277	x	64	x	0.75	1,790	Tons	See Assumptions Sheet for calculations.
Additional Dense Graded Aggregate For Trench & Soil Removed From Site[5]	N/A	x	N/A	x	N/A	1,167	Tons	Equals volume for footers and soil removed from site.
					Total:	2,957	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 4

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
Geotextile Fabric	277	x	64	x	N/A	17,728	SF	

Notes:

1. 20% deducted from total wall area for windows. Assumed 1.30 tons/cy for 8 inch CMU w/ 1/3 voids and 0.3 tons/cy of brick for a total of 1.6 tons/cy for masonry and 5 psf for glass.
2. Assumed density of 3 psf for 1 layer of asphalt shingles, assuming 5 layers, the total density is 15 psf for roofing materials.
3. Assumed density of 2 tons/CY for concrete.
4. Assumed density of 120 pcf for soil.
5. Assumed density of 140 pcf for dense graded aggregate.

General Notes:

1. Unit quantities shown on this spread sheet for below grade concrete, excavation, bituminous surface coarse, dense graded aggregate, and geotextile have been rounded up to the nearest 10 on the Bid Schedule and Opinion of Probable Construction Cost for contingency purposes. See Pricing Back-Up Derivations (provided under separate cover) for further assumptions and clarifications.

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 5

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
BUILDING AREA								
Area (Building 9, 9A, 9B, & 9C)		As Measured on the Drawings				40,092	SF	
Area (Building 17)		As Measured on the Drawings				400	SF	
					Total:	40,492	SF	
MASONRY[1]								
BUILDING 9, 9A, 9B, 9C								Non-hazardous masonry quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous masonry quantities are included under the unit price item for Demolition, Handling / Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm. 20% deducted for windows see note 1.
Wall - Non-Hazardous	251	x	1	x	15	178	Tons	
Wall - PCB Contaminated > 50 ppm	726	x	1	x	15	516	Tons	
					Total:	695	Tons	
BUILDING 17								Non-hazardous masonry quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous masonry quantities are included under the unit price item for Demolition, Handling / Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm. 20% deducted for windows see note 1.
Wall - PCB Contaminated > 50 ppm	86	x	1	x	15	61	Tons	
					Total:	61	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 5

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
Glass[1]								
BUILDING 9, 9A, 9B, 9C								
Wall	977	x	N/A	x	15	7	Tons	Glass quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. 80% deducted for masonry see note 1.
					Total:	7	Tons	
Saw Tooth Trusses								
Glass for 3 Trusses (80% Deducted for Wood and Roofing Materials)	201	x	N/A	x	40	12	Tons	Glass quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. 80% deducted for Wood and Roofing Materials.
					Total:	12	Tons	
BUILDING 17								
Wall	86	x	N/A	x	15	0.65	Tons	Glass quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. 80% deducted for masonry see note 1.
					Total:	1	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 5

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
WOOD[2]								
Roof Decking (Building 9, 9A, 9B, & 9C)	40,092	SF As Measured On Drawings		x	N/A	80	Tons	Wood quantities included in Bid Schedule under the lump sum item for Asbestos Abatement.
Roof Decking for 3 Saw Tooth Trusses (20% Deducted for Glass)	201	x	40	x	N/A	39	Tons	
Roof Decking (Building 17)	400	SF As Measured On Drawings		x	N/A	1	Tons	
					Total:	120	Tons	
ROOFING MATERIALS[3]								
Roofing Materials (Building 9, 9A, 9B, 9C)	40,092	SF As Measured On Drawings		x	N/A	301	Tons	Roofing Material quantities included in Bid Schedule under the lump sum item for Asbestos Abatement.
Roofing Materials for 3 Saw Tooth Trusses (20% Deducted for Glass)	201	x	40	x	N/A	145	Tons	
Roofing Materials (Building 17)	400	SF As Measured On Drawings		x	N/A	3	Tons	
					Total:	448	Tons	
STEEL FRAMING MEMBERS								
40 Columns - W12 x 65 at 15' High	40	x	N/A	x	15	20	Tons	Assume column weight of 65 pounds per foot.
Beams - W18 x 35	1665	x	N/A	x	N/A	29	Tons	Assume beam weight of 35 pounds per foot.
					Total:	49	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 5

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
CONCRETE[4]								
Above Grade Concrete								Non-hazardous concrete quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous concrete quantities are included under the unit price item for Demolition, Handling / Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm.
Slab on Grade (Building 9, 9A, 9B, & 9C) - Non-Hazardous	31,090	SF As Measured On Drawings	x	0.56		1,279	Tons	
Slab on Grade (Building 9, 9A, 9B, & 9C) - PCB Contaminated > 50 ppm	8,940	SF As Measured On Drawings	x	0.56		368	Tons	
Slab on Grade (Building 17) - Non-Hazardous	463	SF As Measured On Drawings	x	0.46		16	Tons	
				Total:		1,663	Tons	
Below Grade Concrete								
BUILDING 9, 9A, 9B, 9C								
Footings (Standard Tee) - Non-Hazardous	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	Non-hazardous below grade concrete quantities are included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm.
Footings (Standard Tee) - TSCA Waste > 50 ppm	892	x	Refer to Excavation Section on Assumptions Sheet			396	Tons	
Footings (Standard Tee) - RCRA Waste - (Failing TCLP)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA > 50 ppm)	576	x	Refer to Excavation Section on Assumptions Sheet			256	Tons	
				Total:		652	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 5

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
BUILDING 17								
Footings (Standard Tee) - Non-Hazardous	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Footings (Standard Tee) - TSCA Waste < 500 ppm	80	x	Refer to Excavation Section on Assumptions Sheet			36	Tons	Non-hazardous below grade concrete quantities are included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm.
Footings (Standard Tee) - TSCA Waste > 500 ppm	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Footings (Standard Tee) - RCRA Waste - (Failing TCLP)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA < 500 ppm)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA > 500 ppm)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
					Total:	36	Tons	
EXCAVATION (1:1 SIDE SLOPES)[5]								
BUILDING 9, 9A, 9B, 9C								
Excavation for Footers - Non-Hazardous	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Excavation for Footers - TSCA Waste < 500 ppm	293	x	Refer to Excavation Section on Assumptions Sheet			387	Tons	
Excavation for Footers - TSCA Waste > 500 ppm	599	x	Refer to Excavation Section on Assumptions Sheet			791	Tons	Excavation quantities included in Bid Schedule under unit price items for hazardous and non-hazardous soil disposal and reuse.
Excavation for Footers - RCRA Waste - (Failing TCLP)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA < 500 ppm)	167	x	Refer to Excavation Section on Assumptions Sheet			220	Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA > 500 ppm)	409	x	Refer to Excavation Section on Assumptions Sheet			540	Tons	
					Total:	1,938	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 5

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
BUILDING 17								
Excavation for Footers - Non-Hazardous	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Excavation for Footers - TSCA Waste < 500 ppm	80	x	Refer to Excavation Section on Assumptions Sheet			106	Tons	
Excavation for Footers - TSCA Waste > 500 ppm	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	Excavation quantities included in Bid Schedule under unit price items for hazardous and non-hazardous soil disposal and reuse.
Excavation for Footers - RCRA Waste - (Failing TCLP)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA < 500 ppm)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA > 500 ppm)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
					Total:	106	Tons	
SLAB RESTORATION (SLAB + 20 feet)								
3-inch Bituminous Surface Course	276	x	205	x	N/A	6,287	SY	See Assumptions Sheet for calculations.
9-inch Dense Graded Subbase Aggregate[6]	276	x	205	x	0.75	5,703	Tons	See Assumptions Sheet for calculations.
Additional Dense Graded Aggregate For Trench & Soil Removed From Site[6]	N/A	x	N/A	x	N/A	3,034	Tons	Equals volume for footers and soil removed from site.
					Total:	8,737	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 5

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
Geotextile Fabric	276	x	205	x	N/A	56,580	SF	

Notes:
1. 20% deducted from total wall area for windows. Assumed 1.30 tons/cy for 8 inch CMU w/ 1/3 voids and 0.3 tons/cy of brick for a total of 1.6 tons/cy for masonry and 5 psf for glass.
2. Assumed density of 4 psf for wood roofing.
3. Assumed density of 3 psf for 1 layer of asphalt shingles, assuming 5 layers, the total density is 15 psf for roofing materials.
4. Assumed density of 2 tons/CY for concrete.
5. Assumed density of 120 pcf for soil.
6. Assumed density of 140 pcf for dense graded aggregate.

General Notes:
1. Unit quantities shown on this spread sheet for below grade concrete, excavation, bituminous surface coarse, dense graded aggregate, and geotextile have been rounded up to the nearest 10 on the Bid Schedule and Opinion of Probable Construction Cost for contingency purposes. See Pricing Back-Up Derivations (provided under separate cover) for further assumptions and clarifications.

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 6

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
BUILDING AREA								
Area (Building 10)	As Measured on the Drawings					5,324	SF	
Area (Building 10A)	As Measured on the Drawings					800	SF	
					Total:	6,124	SF	
STEEL - SIDING(1)								
BUILDING 10								
Wall - PCB Contaminated > 50 ppm	311	x	1/8	x	11	9	Tons	Steel quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal.
					Total:	9	Tons	
BUILDING 10A								
Wall - Non-Hazardous	119	x	1/8	x	10	3	Tons	Steel quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal.
					Total:	3	Tons	
STEEL - ROOFING(1)								
Roofing (Building 10) - Non-Hazardous	5,324	SF As Measured On Drawings		x	3/8	41	Tons	Steel quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal.
Roofing (Building 10A) - Non-Hazardous	800	SF As Measured On Drawings		x	3/8	6	Tons	
					Total:	47	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 6

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
STEEL FRAMING MEMBERS								
No Information Available	N/A	x	N/A	x	N/A	0	Tons	
CONCRETE[2]								Non-hazardous concrete quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous concrete quantities are included under the unit price item for Demolition, Handling / Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm.
Above Grade Concrete								
Slab on Grade (Building 10) - Non-Hazardous	5,345	SF As Measured On Drawings		x	0.5	198	Tons	
Slab on Grade (Building 10A) - Non-Hazardous	779	SF As Measured On Drawings		x	0.5	14	CY	
					Total:	212	Tons	
Below Grade Concrete								
BUILDING 10								
Footings (Standard Tee) - Non-Hazardous	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Footings (Standard Tee) - TSCA Waste > 50 ppm	440	x	Refer to Excavation Section on Assumptions Sheet			196	Tons	
Footings (Standard Tee) - RCRA Waste - (Failing TCLP)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA > 50 ppm)	30	x	Refer to Excavation Section on Assumptions Sheet			13	Tons	
					Total:	209	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 6

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
BUILDING 10A								
Footings (Standard Tee) - Non-Hazardous	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	Non-hazardous below grade concrete quantities are included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm.
Footings (Standard Tee) - TSCA Waste < 500 ppm	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Footings (Standard Tee) - TSCA Waste > 500 ppm	66	x	Refer to Excavation Section on Assumptions Sheet			29	Tons	
Footings (Standard Tee) - RCRA Waste - (Failing TCLP)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA < 500 ppm)	32	x	Refer to Excavation Section on Assumptions Sheet			14	Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA > 500 ppm)	61	x	Refer to Excavation Section on Assumptions Sheet			27	Tons	
					Total:	71	Tons	
EXCAVATION (1:1 SIDE SLOPES)[5]								
BUILDING 10								
Excavation for Footers - Non-Hazardous	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	Excavation quantities included in Bid Schedule under unit price items for hazardous and non-hazardous soil disposal and reuse.
Excavation for Footers - TSCA Waste < 500 ppm	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Excavation for Footers - TSCA Waste > 500 ppm	440	x	Refer to Excavation Section on Assumptions Sheet			581	Tons	
Excavation for Footers - RCRA Waste - (Failing TCLP)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA < 500 ppm)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA > 500 ppm)	30	x	Refer to Excavation Section on Assumptions Sheet			40	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 6

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
					Total:	620	Tons	
BUILDING 10A								
Excavation for Footers - Non-Hazardous	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Excavation for Footers - TSCA Waste < 500 ppm	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Excavation for Footers - TSCA Waste > 500 ppm	66	x	Refer to Excavation Section on Assumptions Sheet			87	Tons	Excavation quantities included in Bid Schedule under unit price items for hazardous and non-hazardous soil disposal and reuse.
Excavation for Footers - RCRA Waste - (Failing TCLP)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA < 500 ppm)	32	x	Refer to Excavation Section on Assumptions Sheet			42	Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA > 500 ppm)	61	x	Refer to Excavation Section on Assumptions Sheet			81	Tons	
					Total:	210	Tons	
SLAB RESTORATION (SLAB + 20 feet)								
3-inch Bituminous Surface Course (Building 10)	124	x	70	x	N/A	965	SY	See Assumptions Sheet for calculations.
3-inch Bituminous Surface Course (Building 10A)	60	x	40	x	N/A	267	SY	See Assumptions Sheet for calculations.
					Total:	1,231	SY	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site
OU-2 - Building Demolition
Quantity Take-Off
Cluster 6

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
9-inch Dense Graded Subbase Aggregate[4] (Building 10)	124	x	70	x	0.75	644	Tons	See Assumptions Sheet for calculations.
9-inch Dense Graded Subbase Aggregate[4] (Building 10A)	60	x	40	x	0.75	151	Tons	See Assumptions Sheet for calculations.
Additional Dense Graded Aggregate For Trench & Soil Removed From Site[4]	N/A	x	N/A	x	N/A	1,233	Tons	Equals volume for footers and soil removed from site.
					Total:	2,028	Tons	
Geotextile Fabric (Building 10)	124	x	70	x	N/A	8,680	SF	
Geotextile Fabric (Building 10A)	60	x	40	x	N/A	2,400	SF	
					Total:	11,080	SF	

Notes:
1. Weight of light weight steel is 490 lbs/cf
2. Assumed density of 2 tons/CY for concrete.
3. Assumed density of 120 pcf for soil.
4. Assumed density of 140 pcf for dense graded aggregate.

General Notes:
1. Unit quantities shown on this spread sheet for below grade concrete, excavation, bituminous surface coarse, dense graded aggregate, and geotextile have been rounded up to the nearest 10 on the Bid Schedule and Opinion of Probable Construction Cost for contingency purposes. See Pricing Back-Up Derivations (provided under separate cover) for further assumptions and clarifications.

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 7

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
BUILDING AREA								
Area (Building 11)		As Measured on the Drawings				8,003	SF	
Area (Building 12)		As Measured on the Drawings				8,003	SF	
					Total:	16,006	SF	
STEEL - SIDING(1)								
BUILDING 11								
Wall - PCB Contaminated > 50 ppm	479	x	1/8	x	20.33	25	Tons	Steel quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal.
					Total:	25	Tons	
BUILDING 12								
Wall - PCB Contaminated > 50 ppm	479	x	1/8	x	20.33	25	Tons	Steel quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal.
					Total:	25	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 7

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
STEEL - FRAMING MEMBERS[2]								
Building 11	200	x	N/A	x	20.33	24	Tons	Steel quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal.
Building 12	200	x	N/A	x	20.33	24	Tons	
					Total:	49	Tons	
CONCRETE[3]								
Above Grade Concrete								Non-hazardous concrete quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous concrete quantities are included under the unit price item for Demolition, Handling / Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm.
Slab on Grade (Building 11) - Non-Hazardous	8,003	SF As Measured On Drawings		x	0.33	198	Tons	
Slab on Grade (Building 12) - PCB Contaminated > 50 ppm	8,003	SF As Measured On Drawings		x	0.29	173	Tons	
					Total:	371	Tons	
Below Grade Concrete								
BUILDING 11								
Footings (Standard Tee) - Non-Hazardous	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	Non-hazardous below grade concrete quantities are included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm.
Footings (Standard Tee) - TSCA Waste > 50 ppm	253	x	Refer to Excavation Section on Assumptions Sheet			112	Tons	
Footings (Standard Tee) - RCRA Waste - (Failing TCLP)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA > 50 ppm)	329	x	Refer to Excavation Section on Assumptions Sheet			146	Tons	
					Total:	259	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 7

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
BUILDING 12								
Footings (Standard Tee) - Non-Hazardous	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Footings (Standard Tee) - TSCA Waste < 500 ppm	352	x	Refer to Excavation Section on Assumptions Sheet			156	Tons	Non-hazardous below grade concrete quantities are included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm.
Footings (Standard Tee) - TSCA Waste > 500 ppm	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Footings (Standard Tee) - RCRA Waste - (Failing TCLP)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA < 500 ppm)	240	x	Refer to Excavation Section on Assumptions Sheet			107	Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA > 500 ppm)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
					Total:	263	Tons	
EXCAVATION (1:1 SIDE SLOPES)[5]								
BUILDING 11								
Excavation for Footers - Non-Hazardous	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Excavation for Footers - TSCA Waste < 500 ppm	253	x	Refer to Excavation Section on Assumptions Sheet			334	Tons	
Excavation for Footers - TSCA Waste > 500 ppm	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	Excavation quantities included in Bid Schedule under unit price items for hazardous and non-hazardous soil disposal and reuse.
Excavation for Footers - RCRA Waste - (Failing TCLP)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA < 500 ppm)	329	x	Refer to Excavation Section on Assumptions Sheet			434	Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA > 500 ppm)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
					Total:	768	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 7

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
BUILDING 12								
Excavation for Footers - Non-Hazardous	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	Excavation quantities included in Bid Schedule under unit price items for hazardous and non-hazardous soil disposal and reuse.
Excavation for Footers - TSCA Waste < 500 ppm	352	x	Refer to Excavation Section on Assumptions Sheet			465	Tons	
Excavation for Footers - TSCA Waste > 500 ppm	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Excavation for Footers - RCRA Waste - (Failing TCLP)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA < 500 ppm)	240	x	Refer to Excavation Section on Assumptions Sheet			317	Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA > 500 ppm)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
					Total:	781	Tons	
SLAB RESTORATION (SLAB + 20 feet)								
3-inch Bituminous Surface Course (Building 11)	220	x	61	x	N/A	1,491	SY	See Assumptions Sheet for calculations.
3-inch Bituminous Surface Course (Building 12)	220	x	61	x	N/A	1,491	SY	See Assumptions Sheet for calculations.
					Total:	2,983	SY	
9-inch Dense Graded Subbase Aggregate[5] (Building 11)	220	x	61	x	0.75	1,221	Tons	See Assumptions Sheet for calculations.
9-inch Dense Graded Subbase Aggregate[5] (Building 12)	220	x	61	x	0.75	1,221	Tons	See Assumptions Sheet for calculations.
Additional Dense Graded Aggregate For Trench & Soil Removed From Site[5]	N/A	x	N/A	x	N/A	2,301	Tons	Equals volume for footers and soil removed from site.
					Total:	4,743	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 7

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
Geotextile Fabric (Building 11)	220	x	61	x	N/A	13,420	SF	
Geotextile Fabric (Building 12)	220	x	61	x	N/A	13,420	SF	
					Total:	26,840	SF	

Notes:
1. Weight of light weight steel is 490 lbs/cf.
2. Framing consists of 6-inch deep arch steel members 24-inches on center spacing at 12 pounds per foot.
3. Assumed density of 2 tons/CY for concrete.
4. Assumed density of 120 pcf for soil.
5. Assumed density of 140 pcf for dense graded aggregate.

General Notes:
1. Unit quantities shown on this spread sheet for below grade concrete, excavation, bituminous surface coarse, dense graded aggregate, and geotextile have been rounded up to the nearest 10 on the Bid Schedule and Opinion of Probable Construction Cost for contingency purposes. See Pricing Back-Up Derivations (provided under separate cover) for further assumptions and clarifications.

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 8

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
BUILDING AREA								
Area (Building 13)		As Measured on the Drawings				4,296	SF	
Area (Building 15, 16, & 18)		As Measured on the Drawings				7,314	SF	
					Total:	11,610	SF	
MASONRY[1]								
BUILDING 13								Non-hazardous masonry quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous masonry quantities are included under the unit price item for Demolition, Handling / Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm. 20% deducted for windows see note 1.
Wall - Non-Hazardous	145	x	1	x	19.5	134	Tons	
Wall - Metal Contamination	146	x	1	x	19.5	135	Tons	
					Total:	269	Tons	
BUILDING 15								Non-hazardous masonry quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous masonry quantities are included under the unit price item for Demolition, Handling / Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm. 20% deducted for windows see note 1.
Wall - Non-Hazardous	90	x	1	x	24	102	Tons	
Wall - Metal Contamination	33	x	1	x	24	38	Tons	
					Total:	140	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 8

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
BUILDING 16								Non-hazardous masonry quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous masonry quantities are included under the unit price item for Demolition, Handling / Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm. 20% deducted for windows see note 1.
Wall - Non-Hazardous	155	x	1	x	38	279	Tons	
Wall - Metal Contamination	33	x	1	x	38	59	Tons	
					Total:	339	Tons	
BUILDING 18								Non-hazardous masonry quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous masonry quantities are included under the unit price item for Demolition, Handling / Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm. 20% deducted for windows see note 1.
Wall - Non-Hazardous	100	x	1	x	13.5	64	Tons	
					Total:	64	Tons	
Glass[1]								
BUILDING 13								Glass quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. 80% deducted for masonry see note 1.
Wall	290	x	N/A	x	19.5	3	Tons	
					Total:	3	Tons	
BUILDING 15								Glass quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. 80% deducted for masonry see note 1.
Wall	123	x	N/A	x	24	1.5	Tons	
					Total:	1.5	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 8

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
BUILDING 16								
Wall	188	x	N/A	x	38	3.6	Tons	Glass quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. 80% deducted for masonry see note 1.
					Total:	3.6	Tons	
BUILDING 18								
Wall	100	x	N/A	x	14	0.7	Tons	Glass quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. 80% deducted for masonry see note 1.
					Total:	0.7	Tons	
WOOD[2]								
Roof Decking (Building 15)	72	x	36	x	1/2	5.2	Tons	Wood quantities included in Bid Schedule under the lump sum item for Asbestos Abatement.
Roof Decking (Building 16)	64	x	58	x	1/2	7.4	Tons	
					Total:	13	Tons	
ROOFING MATERIALS[3]								
Roofing Materials (Building 13)	4,296	SF As Measured On Drawings x			N/A	32	Tons	Roofing Material quantities included in Bid Schedule under the lump sum item for Asbestos Abatement.
Roofing Materials (Building 15, 16, & 18)	7,314	SF As Measured On Drawings x			N/A	55	Tons	
					Total:	87	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 8

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
STEEL FRAMING MEMBERS								
BUILDING 15								
3 Columns - W12 x 65 at 27' High	27	x	N/A	x	3	3	Tons	Assumed column weight of 65 pounds per foot.
Beams - W18 x 35	180	x	N/A	x	N/A	3	Tons	Assumed beam weight of 35 pounds per foot.
					Total:	6	Tons	
BUILDING 16								
3 Columns - W12 x 65 at 27' High	27	x	N/A	x	3	3	Tons	Assumed column weight of 65 pounds per foot.
Beams - W8 x 21	150	x	N/A	x	N/A	2	Tons	Assumed beam weight of 21 pounds per foot.
Beams - W12 x 35	168	x	N/A	x	N/A	3	Tons	Assumed beam weight of 35 pounds per foot.
Roof Beams - W14 x 22	175	x	N/A	x	N/A	2	Tons	Assumed beam weight of 22 pounds per foot.
Beams - W24 x 55	256	x	N/A	x	N/A	7	Tons	Assumed beam weight of 55 pounds per foot.
					Total:	16	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 8

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
CONCRETE[4]								
Above Grade Concrete								
Slab on Grade (Building 13) - Non-Hazardous	4,296	SF As Measured On Drawings	x		0.5	159	Tons	Non-hazardous concrete quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous concrete quantities are included under the unit price item for Demolition, Handling / Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm.
Slab on Grade (Building 15, 16, & 18) - Non-Hazardous	7,314	SF As Measured On Drawings	x		0.42	226	Tons	
Roof (Building 13) - Slab - Non-Hazardous	4,296	SF As Measured On Drawings	x		0.5	159	Tons	
Roof (Building 13) - 4 Beams (2' Deep x 1' Wide) - Non-Hazardous	271	x	2	x	1	20	Tons	
Roof (Building 18) - Slab - Non-Hazardous	17	x	9	x	0.5	6	Tons	
Roof (Building 18) - 6 Beams (2' Deep x 1' Wide) - Non-Hazardous	204	x	2	x	1	15	Tons	
					Total:	585	Tons	
Below Grade Concrete								
BUILDING 13								
Footings (Standard Tee) - Non-Hazardous	15	x	Refer to Excavation Section on Assumptions Sheet			7	Tons	Non-hazardous below grade concrete quantities are included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm.
Footings (Standard Tee) - TSCA Waste > 50 ppm	315	x	Refer to Excavation Section on Assumptions Sheet			140	Tons	
Footings (Standard Tee) - RCRA Waste - (Failing TCLP)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA > 50 ppm)	17	x	Refer to Excavation Section on Assumptions Sheet			8	Tons	
					Total:	154	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 8

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
BUILDING 15, 16, & 18								
Footings (Standard Tee) - Non-Hazardous	55	x	Refer to Excavation Section on Assumptions Sheet			24	Tons	Non-hazardous below grade concrete quantities are included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm.
Footings (Standard Tee) - TSCA Waste > 50 ppm	84	x	Refer to Excavation Section on Assumptions Sheet			37	Tons	
Footings (Standard Tee) - RCRA Waste - (Failing TCLP)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA > 50 ppm)	407	x	Refer to Excavation Section on Assumptions Sheet			181	Tons	
					Total:	243	Tons	
BUILDING 15 - ADDITIONAL CONCRETE FOR BASEMENT								
Piers in Basement - Non-Hazardous	8	x	8	x	8	228	Tons	Six Piers Total
Basement SOG - Non-Hazardous	134	x	72	x	2	1,429	Tons	Non-hazardous below grade concrete quantities are included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm.
Basement Walls - Non-Hazardous	35	x	1	x	10	65	Tons	
Basement Walls (Standard Tee) - TSCA Waste > 50 ppm	28	x	1	x	10	52	Tons	
Basement Walls (Standard Tee) - RCRA Waste - (Failing TCLP)	0	x	1	x	10	0	Tons	
Basement Walls (Standard Tee) - Both TSCA/RCRA (TSCA > 50 ppm)	149	x	1	x	10	276	Tons	
					Total:	2,049	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 8

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
EXCAVATION (1:1 SIDE SLOPES)[3]								
BUILDING 13								
Excavation for Footers - Non-Hazardous	15	x	Refer to Excavation Section on Assumptions Sheet			20	Tons	
Excavation for Footers - TSCA Waste < 500 ppm	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Excavation for Footers - TSCA Waste > 500 ppm	315	x	Refer to Excavation Section on Assumptions Sheet			416	Tons	Excavation quantities included in Bid Schedule under unit price items for hazardous and non-hazardous soil disposal and reuse.
Excavation for Footers - RCRA Waste - (Failing TCLP)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA < 500 ppm)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA > 500 ppm)	17	x	Refer to Excavation Section on Assumptions Sheet			22	Tons	
					Total:	458	Tons	
BUILDING 15, 16, & 18								
Excavation for Footers - Non-Hazardous	55	x	Refer to Excavation Section on Assumptions Sheet			73	Tons	
Excavation for Footers - TSCA Waste < 500 ppm	28	x	Refer to Excavation Section on Assumptions Sheet			37	Tons	
Excavation for Footers - TSCA Waste > 500 ppm	56	x	Refer to Excavation Section on Assumptions Sheet			74	Tons	Excavation quantities included in Bid Schedule under unit price items for hazardous and non-hazardous soil disposal and reuse.
Excavation for Footers - RCRA Waste - (Failing TCLP)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA < 500 ppm)	287	x	Refer to Excavation Section on Assumptions Sheet			379	Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA > 500 ppm)	120	x	Refer to Excavation Section on Assumptions Sheet			158	Tons	
					Total:	721	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 8

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
BUILDING 15 - ADDITIONAL EXCAVATION FOR BASEMENT								
Excavation for Basement - Non-Hazardous	35	x	2	x	10	42	Tons	
Excavation for Basement - TSCA Waste < 500 ppm	0	x	2	x	10	0	Tons	
Excavation for Basement - TSCA Waste > 500 ppm	28	x	2	x	10	34	Tons	Excavation quantities included in Bid Schedule under unit price items for hazardous and non-hazardous soil disposal and reuse.
Excavation for Basement - RCRA Waste - (Failing TCLP)	0	x	2	x	10	0	Tons	
Excavation for Basement - Both TSCA/RCRA (TSCA < 500 ppm)	114	x	2	x	10	137	Tons	
Excavation for Basement - Both TSCA/RCRA (TSCA > 500 ppm)	35	x	2	x	10	42	Tons	
					Total:	254	Tons	
SLAB RESTORATION (SLAB + 20 feet)								
3-inch Bituminous Surface Course (Building 13)	123	x	62	x	N/A	847	SY	See Assumptions Sheet for calculations.
3-inch Bituminous Surface Course (Building 15, 16, & 18)	154	x	92	x	N/A	1,574	SY	See Assumptions Sheet for calculations.
					Total:	2,422	SY	
9-inch Dense Graded Subbase Aggregate[6] (Building 13)	123	x	62	x	0.75	565	Tons	See Assumptions Sheet for calculations.
9-inch Dense Graded Subbase Aggregate[6] (Building 15, 16, & 18)	154	x	92	x	0.75	1,126	Tons	See Assumptions Sheet for calculations.
Additional Dense Graded Aggregate For Basement[6] (Building 15)	134	x	72	x	12	8,226	Tons	See Assumptions Sheet for calculations.
Additional Dense Graded Aggregate For Trench & Soil Removed From Site[6]	N/A	x	N/A	x	N/A	1,969	Tons	Equals volume for footers and soil removed from site.
					Total:	11,885	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 8

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
Geotextile Fabric (Building 13)	123	x	62	x	N/A	7,626	SF	
Geotextile Fabric (Building 15, 16, & 18)	154	x	92	x	N/A	14,168	SF	
					Total:	21,794	SF	

Notes:

1. 20% deducted from total wall area for windows. Assumed 1.30 tons/cy for 8 inch CMU w/ 1/3 voids and 0.3 tons/cy of brick for a total of 1.6 tons/cy for masonry and 5 psf for glass.
2. Assumed density of 4 psf for wood roofing.
3. Assumed density of 3 psf for 1 layer of asphalt shingles, assuming 5 layers, the total density is 15 psf for roofing materials.
4. Assumed density of 2 tons/CY for concrete.
5. Assumed density of 120 pcf for soil.
6. Assumed density of 140 pcf for dense graded aggregate.

General Notes:

1. Unit quantities shown on this spread sheet for below grade concrete, excavation, bituminous surface coarse, dense graded aggregate, and geotextile have been rounded up to the nearest 10 on the Bid Schedule and Opinion of Probable Construction Cost for contingency purposes. See Pricing Back-Up Derivations (provided under separate cover) for further assumptions and clarifications.

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 9

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
BUILDING AREA								
Area	As Measured on the Drawings					1,630	SF	
					Total:	1,630	SF	
WOOD[1]								
Wall	174	x	N/A	x	15	5	Tons	Wood quantities included in Bid Schedule under the lump sum item for Asbestos Abatement.
Roof Decking	67	x	27	x	N/A	3.6	Tons	
					Total:	8.8	Tons	
ROOFING MATERIALS[2]								
Roofing Materials	1,630	SF As Measured On Drawings		x	N/A	12	Tons	Roofing Material quantities included in Bid Schedule under the lump sum item for Asbestos Abatement.
					Total:	12	Tons	
STEEL FRAMING MEMBERS								
N/A	N/A	x	N/A	x	N/A	0	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 9

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
CONCRETE[3]								
Above Grade Concrete								Non-hazardous concrete quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous concrete quantities are included under the unit price item for Demolition, Handling / Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm.
Slab on Grade - Non-Hazardous	1,630	SF As Measured On Drawings	x	0.5		60	Tons	
				Total:		60	Tons	
Below Grade Concrete								
Footings (Standard Tee) - Non-Hazardous	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	Non-hazardous below grade concrete quantities are included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm.
Footings (Standard Tee) - TSCA Waste > 50 ppm	244	x	Refer to Excavation Section on Assumptions Sheet			108	Tons	
Footings (Standard Tee) - RCRA Waste - (Failing TCLP)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA > 50 ppm)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
				Total:		108	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 9

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
EXCAVATION (1:1 SIDE SLOPES)[5]								
Excavation for Footers - Non-Hazardous	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Excavation for Footers - TSCA Waste < 500 ppm	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Excavation for Footers - TSCA Waste > 500 ppm	244	x	Refer to Excavation Section on Assumptions Sheet			322	Tons	Excavation quantities included in Bid Schedule under unit price items for hazardous and non-hazardous soil disposal and reuse.
Excavation for Footers - RCRA Waste - (Failing TCLP)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA < 500 ppm)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA > 500 ppm)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
					Total:	322	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 9

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
SLAB RESTORATION (SLAB + 20 feet)								
3-inch Bituminous Surface Course	87	x	47	x	N/A	454	SY	See Assumptions Sheet for calculations.
9-inch Dense Graded Subbase Aggregate[5]	87	x	47	x	0.75	277	Tons	See Assumptions Sheet for calculations.
Additional Dense Graded Aggregate For Trench & Soil Removed From Site[5]	N/A	x	N/A	x	N/A	478	Tons	Equals volume for footers and soil removed from site.
					Total:	755	Tons	
Geotextile Fabric	87	x	47	x	N/A	4,089	SF	

Notes:

1. Assumed density of 4 psf for wood roofing.
2. Assumed density of 3 psf for 1 layer of asphalt shingles, assuming 5 layers, the total density is 15 psf for roofing materials.
3. Assumed density of 2 tons/CY for concrete.
4. Assumed density of 120 pcf for soil.
5. Assumed density of 140 pcf for dense graded aggregate.

General Notes:

1. Unit quantities shown on this spread sheet for below grade concrete, excavation, bituminous surface coarse, dense graded aggregate, and geotextile have been rounded up to the nearest 10 on the Bid Schedule and Opinion of Probable Construction Cost for contingency purposes. See Pricing Back-Up Derivations (provided under separate cover) for further assumptions and clarifications.

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 10

TYPE / LOCATION	DIMENSIONS (FEET) DIA	x	Height	x	Thickness	TOTAL QUANTITY		REMARKS
EXCAVATION (1:1 SIDE SLOPES)[1]								
Excavation Non-Hazardous	0	x	0	x	N/A	0	Tons	
Excavation - TSCA Waste < 500 ppm	30	x	6	x	N/A	191	Tons	
Excavation - TSCA Waste > 500 ppm	0	x	0	x	N/A	0	Tons	Excavation quantities included in Bid Schedule under unit price items for hazardous and non-hazardous soil disposal and reuse.
Excavation - RCRA Waste - (Failing TCLP)	0	x	0	x	N/A	0	Tons	
Excavation - Both TSCA/RCRA (TSCA < 500 ppm)	30	x	6	x	N/A	64	Tons	
Excavation - Both TSCA/RCRA (TSCA > 500 ppm)	0	x	0	x	N/A	0	Tons	
					Total:	254	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 10

TYPE / LOCATION	DIMENSIONS (FEET) DIA	x	Height	x	Thickness	TOTAL QUANTITY		REMARKS
CONCRETE[2] - BELOW GRADE								
Piers - Non-Hazardous	0	x	0	x	0	0	Tons	Non-hazardous below grade concrete quantities are included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm.
Piers - TSCA Waste > 50 ppm	6	x	0	x	0	0	Tons	
Piers - RCRA Waste - (Failing TCLP)	0	x	0	x	0	0	Tons	
Piers - Both TSCA/RCRA (TSCA > 50 ppm)	6	x	0	x	0	0	Tons	
					Total:	0	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 10

TYPE / LOCATION	DIMENSIONS (FEET) DIA	x	Height	x	Thickness	TOTAL QUANTITY		REMARKS
STEEL[3]								
Water Tower	30	x	25	x	0.03125	18	Tons	Steel quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal.
Top and Bottom Sections	30	x	N/A	x	0.03125	5	Tons	
					Total:	23	Tons	
SLAB RESTORATION (SLAB + 20 feet)								
3-inch Bituminous Surface Course	50	x	N/A	x	N/A	218	SY	See Assumptions Sheet for calculations.
9-inch Dense Graded Subbase Aggregate[4]	50	x	0.75	x	N/A	163	Tons	See Assumptions Sheet for calculations.
Additional Dense Graded Aggregate For Trench & Soil Removed From Site[5]	N/A	x	N/A	x	N/A	297	Tons	Equals volume for footers and soil removed from site.
					Total:	460	Tons	
Geotextile Fabric	50	x	N/A	x	N/A	1,963	SF	

Notes:

1. Assumed density of 120 pcf for soil.
2. Assumed density of 2 tons/CY for concrete.
3. Weight of light weight steel is 490 lbs/cf
4. Assumed density of 140 pcf for dense graded aggregate.

General Notes:

1. Unit quantities shown on this spread sheet for below grade concrete, excavation, bituminous surface coarse, dense graded aggregate, and geotextile have been rounded up to the nearest 10 on the Bid Schedule and Opinion of Probable Construction Cost for contingency purposes. See Pricing Back-Up Derivations (provided under separate cover) for further assumptions and clarifications.

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 11

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
BUILDING AREA								
Area	As Measured on the Drawings					5,080	SF	
					Total:	5,080	SF	
WOOD[1]								
Walls	299	x	N/A	x	14	8	Tons	Wood quantities included in Bid Schedule under the lump sum item for Asbestos Abatement.
Roofing	102	x	51	x	N/A	10	Tons	
					Total:	19	Tons	
ROOFING MATERIALS[2]								
Roofing Materials	5,080	SF As Measured On Drawings		x	N/A	38	Tons	Roofing Material quantities included in Bid Schedule under the lump sum item for Asbestos Abatement.
					Total:	38	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 11

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
STEEL FRAMING MEMBERS								
N/A	N/A	x	N/A	x	N/A	0	Tons	
CONCRETE[3]								
Above Grade Concrete								Non-hazardous concrete quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous concrete quantities are included under the unit price item for Demolition, Handling / Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm.
Slab on Grade - Non-Hazardous	5,080	SF As Measured On Drawings		x	0.38	141	Tons	
					Total:	141	Tons	
Below Grade Concrete								
Footings (Standard Tee) - Non-Hazardous	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	Non-hazardous below grade concrete quantities are included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm.
Footings (Standard Tee) - TSCA Waste > 50 ppm	188	x	Refer to Excavation Section on Assumptions Sheet			84	Tons	
Footings (Standard Tee) - RCRA Waste - (Failing TCLP)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA > 50 ppm)	81	x	Refer to Excavation Section on Assumptions Sheet			36	Tons	
					Total:	120	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 11

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
EXCAVATION (1:1 SIDE SLOPES)[5]								
Excavation for Footers - Non-Hazardous	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Excavation for Footers - TSCA Waste < 500 ppm	72	x	Refer to Excavation Section on Assumptions Sheet			95	Tons	
Excavation for Footers - TSCA Waste > 500 ppm	116	x	Refer to Excavation Section on Assumptions Sheet			153	Tons	Excavation quantities included in Bid Schedule under unit price items for hazardous and non-hazardous soil disposal and reuse.
Excavation for Footers - RCRA Waste - (Failing TCLP)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA < 500 ppm)	81	x	Refer to Excavation Section on Assumptions Sheet			107	Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA > 500 ppm)	0	x	Refer to Excavation Section on Assumptions Sheet			0	Tons	
					Total:	355	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 11

TYPE / LOCATION	DIMENSIONS (FEET) Length	x	Width	x	Height	TOTAL QUANTITY		REMARKS
SLAB RESTORATION (SLAB + 20 feet)								
3-inch Bituminous Surface Course	122	x	71	x	N/A	963	SY	See Assumptions Sheet for calculations.
9-inch Dense Graded Subbase Aggregate[5]	122	x	71	x	0.75	640	Tons	See Assumptions Sheet for calculations.
Additional Dense Graded Aggregate For Trench & Soil Removed From Site[5]	N/A	x	N/A	x	N/A	527	Tons	Equals volume for footers and soil removed from site.
					Total:	1,167	Tons	
Geotextile Fabric	122	x	71	x	N/A	8,662	SF	

Notes:

1. Assumed density of 4 psf for wood roofing.
2. Assumed density of 3 psf for 1 layer of asphalt shingles, assuming 5 layers, the total density is 15 psf for roofing materials.
3. Assumed density of 2 tons/CY for concrete.
4. Assumed density of 120 pcf for soil.
5. Assumed density of 140 pcf for dense graded aggregate.

General Notes:

1. Unit quantities shown on this spread sheet for below grade concrete, excavation, bituminous surface coarse, dense graded aggregate, and geotextile have been rounded up to the nearest 10 on the Bid Schedule and Opinion of Probable Construction Cost for contingency purposes. See Pricing Back-Up Derivations (provided under separate cover) for further assumptions and clarifications.

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 12

TYPE / LOCATION	DIMENSIONS (FEET) DIA	x	Height	x	Thickness	TOTAL QUANTITY		REMARKS
EXCAVATION (1:1 SIDE SLOPES)[1]								
Excavation Non-Hazardous	0	x	0	x	N/A	0	Tons	
Excavation - TSCA Waste < 500 ppm	0	x	0	x	N/A	0	Tons	
Excavation - TSCA Waste > 500 ppm	0	x	0	x	N/A	0	Tons	Excavation quantities included in Bid Schedule under unit price items for hazardous and non-hazardous soil disposal and reuse.
Excavation - RCRA Waste - (Failing TCLP)	0	x	0	x	N/A	0	Tons	
Excavation - Both TSCA/RCRA (TSCA < 500 ppm)	0	x	0	x	N/A	0	Tons	
Excavation - Both TSCA/RCRA (TSCA > 500 ppm)	27	x	6	x	N/A	206	Tons	
					Total:	206	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 12

TYPE / LOCATION	DIMENSIONS (FEET) DIA	x	Height	x	Thickness	TOTAL QUANTITY		REMARKS
CONCRETE[2] - BELOW GRADE								
Footing Ring - Non-Hazardous	0	x	0	x	1.5	0	Tons	Non-hazardous below grade concrete quantities are included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of TSCA Waste > 50 ppm.
Footing Ring - TSCA Waste > 50 ppm	0	x	0	x	1.5	0	Tons	
Footing Ring - RCRA Waste - (Failing TCLP)	0	x	0	x	1.5	0	Tons	
Footing Ring - Both TSCA/RCRA (TSCA > 50 ppm)	27	x	4	x	1.5	38	Tons	
					Total:	38	Tons	
STEEL[3]								
Water Tower	27	x	30	x	0.03125	19	Tons	Steel quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal.
Top and Bottom Sections	27	x	N/A	x	0.03125	4	Tons	
					Total:	24	Tons	

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 12

TYPE / LOCATION	DIMENSIONS (FEET) DIA	x	Height	x	Thickness	TOTAL QUANTITY		REMARKS
SLAB RESTORATION (SLAB + 20 feet)								
3-inch Bituminous Surface Course	47	x	N/A	x	N/A	193	SY	See Assumptions Sheet for calculations.
9-inch Dense Graded Subbase Aggregate[4]	47	x	0.75	x	N/A	143	Tons	See Assumptions Sheet for calculations.
Additional Dense Graded Aggregate For Trench & Soil Removed From Site[5]	N/A	x	N/A	x	N/A	276	Tons	Equals volume for footers and soil removed from site.
					Total:	419	Tons	
Geotextile Fabric	47	x	N/A	x	N/A	1,735	SF	

Notes:

1. Assumed density of 120 pcf for soil.
2. Assumed density of 2 tons/CY for concrete.
3. Weight of light weight steel is 490 lbs/cf
4. Assumed density of 140 pcf for dense graded aggregate.

General Notes:

1. Unit quantities shown on this spread sheet for below grade concrete, excavation, bituminous surface coarse, dense graded aggregate, and geotextile have been rounded up to the nearest 10 on the Bid Schedule and Opinion of Probable Construction Cost for contingency purposes. See Pricing Back-Up Derivations (provided under separate cover) for further assumptions and clarifications.

MALCOLM PIRNIE

Cornell-Dubilier Electronics Superfund Site

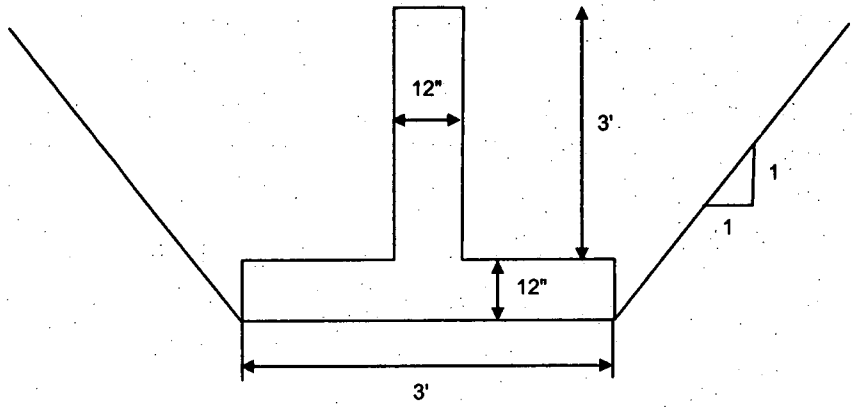
OU-2 - Building Demolition

Quantity Take-Off

Assumptions

Excavation Section:

Standard tee footing with 1:1 side slope



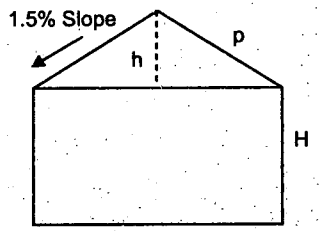
Volume of Dense Graded Aggregate Subbase:

V = (L x W x H) + (W x (1/2 x 0.0075b2) x 2 sides)

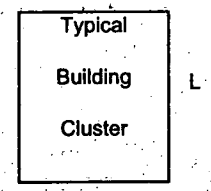
Volume of Pyramid = 1/3 x L x W x h
h = 0.015 x L / 2
Therefore, Volume = $0.0025 \times W \times L^2$

Surface Area of Bituminous Surface Course:

SA = $(W \times (b^2 + (0.015b^2))^{\wedge 1/2}) \times 2$ sides
$p^2 = b^2 + h^2$
Therefore, $p = (b^2 + (0.015b^2))^{1/2}$



Section



Plan